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VIRTUAL COMMUNITIES AS EGALITARIAN SOCIETIES:  
WHY CONTRIBUTIONS MATTER AND WHAT THEY MEAN

by

Kristen E. Rodgers

A THESIS

Presented to the Faculty of  
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VIRTUAL COMMUNITIES AS EGALITARIAN SOCIETIES:  
WHY CONTRIBUTIONS MATTER AND WHAT THEY MEAN

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University of Nebraska, 2011

Adviser: Raymond Hames

This study involves a content analysis of participation and contributions within a virtual community message board. Research focuses on evaluating virtual communities as egalitarian societies and determining what benefits group members receive from participating in and contributing to these communities. Two message board virtual communities were selected for analysis using the methodological approach of netnography. Though many past studies have labeled virtual communities as egalitarian, no clear application of the social structure theory has been applied and analyzed against such a community; this study aims to fix that and identifies key components of egalitarian societies present in virtual communities. Furthermore, through extensive analysis of the messages posted to the virtual communities, the benefits that users gain from participating and contributing are highlighted, specifically identity expression, expertise, advice, emotional and social support, and activist calls for action.

In an effort to better understand self-emerging virtual communities, this study ventures into areas of study that have remained virtually untouched, despite

the heavy presence of virtual communities on the Internet today. This research provides a unique contribution to the field of anthropology in that it utilizes elements of social structure theory to classify and analyze the organization of virtual communities, thereby ultimately showcasing that virtual communities function as a social system with a defined social organization. This organization most closely resembles the social attributes found in traditional egalitarian societies.

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## Chapter 1 - Introduction

Human interaction is changing as rapidly as the technological environment does. No longer are humans confined to geographical and spatial physical institutions that once governed communication. While the community center, library, or church are still relevant ways of connecting with groups of like-minded individuals, a variety of new methods are available that shatter the geographical restraints of old and open up millions of possibilities for those who connect via the Internet. These new online social networks and virtual communities have challenged the traditional definitions of community and explore how people achieve meaning and purpose from spatially, and sometimes temporally, separated areas all over the world.

Despite the fact that reliance and use of these technologies have increased exponentially (and show no sign of slowing), little sociological or anthropological analyses of such environments have been conducted. These virtual communities offer endless possibilities for research in terms of group formation and processes, communication methods, and interpersonal interaction, for example, but traditional social sciences have been slow on the uptake and in offering a coherent approach to studying this new environment. Although virtual communities at first glance may not appear to relate to traditional anthropological theories of group structure, further review has revealed the overall egalitarian nature of virtual communities. Much research has made the assertion that virtual communities tend to be

egalitarian in nature, but very few delve further into this topic to apply egalitarian social structure to virtual communities.

The following sections utilize the social structure theory of egalitarianism and illuminate its application to virtual communities. By first understanding what a community is and its functions, the anthropological framework of egalitarianism can clearly be applied to virtual communities as they promote sharing, lack hierarchical structure, foster equality of status and encourage participation from all members, exhibit reciprocity concerns and prosocial behaviors, boast free access to resources, as well as the freedom to join and leave groups as desired.

Furthermore, the concepts of leadership in virtual communities will be discussed in terms of informal leadership, status, and authority. Like egalitarian societies, virtual communities rarely possess a clear leader with the power to enforce his or her decisions; rather, a fluid, informal leadership is in place that calls upon the expertise and skills of the members when needed. Additionally, different roles of members can be seen within groups, ranging from active participants to “lurkers” to subject matter experts to moderators and so on.

Trust and social capital also figure heavily into the ethos of virtual communities; without traditional social cues, gauging an individual is more difficult in the online environment. As a result, such environments depend on the trust developed between members to produce and pass on reliable information with the intent of not harming or intentionally misleading other members. The costs of extending trust to an untrustworthy individual could be potentially high. Once trust is established, however, and one proves him or herself to be trustworthy, reliable,

and willing to share, he or she gains social capital within the group, and ultimately status. Though status may not provide tangible benefits like better cuts of meat, individuals who enjoy high status are often regarded as authority figures that deserve respect and attention.

The framework of egalitarian societies can clearly be used when evaluating virtual communities. In doing so, this paper looks to further anthropological understanding of virtual communities, how they operate, and how they connect people from all over the world. Although virtual communities have existed in some form for over 30 years, little is still known about what motivates people to use, participate in, and contribute to virtual communities. Though knowledge exchange is often believed to be a key motivation for individuals to use emergent virtual communities, the benefits of contributing remain obscure.

As such, the goal of this research is to utilize the social structure theory of egalitarianism to understand why people contribute to virtual communities despite the lack of tangible benefits they receive for their contributions to a society. As such, this paper seeks to research the following research questions: 1) How do virtual communities function as egalitarian societies; and 2) what benefits do members receive from participating in virtual communities?

## Chapter 2 - Literature Review

Though the study of virtual communities is a relatively newly emerging area of research for social sciences, previous research on virtual community provides a basis from which to understand how such groups function as egalitarian societies and establish what benefits members receive from participating in and contributing to virtual communities. Ridings and Geffen (2004) and Bolton, Katok, and Ockenfels (2004) have conducted research of virtual communities to examine how such groups function and why people join. Though these studies are not concerned with the underlying social structure of virtual communities or determining what benefits members derive from participating in such communities, their studies are important to note in an effort to help researchers understand why people may join such communities.

Ridings and Geffen (2004) conducted a study among users of virtual communities, asking why people “hang out” online. Though the focus of their research centered on understanding why people participate in virtual communities as a way to improve business, it is clear that the question being asked applies to scholarly pursuits as well. Focusing on bulletin board communities, Ridings and Geffen (2004) utilized a convenient sample of active communities with minimum traffic, number of users, and a high proportion of messages with responses. To this end, 33 bulletin board communities that focused on various topics were chosen for the study. After posting the open-ended question “Why did you join this virtual community,” 399 people from 27 communities responded within five days of the

original post. Findings indicated that information exchange, social support, friendship, recreation (or entertainment), common interest, and technical reasons were the top reasons people joined a community (Ridings & Geffen, 2004). Though this study helps indentify the reasons why an individual may join a virtual community, it does not explain why people continue to invest their time and energy with a group that, at first glance, does not provide benefits to doing so.

Though many researchers remark that virtual communities are egalitarian in nature and serve as examples of almost utopian societies, less attention is paid to underlying social motivations such as prestige and status seeking. Lampel & Bhalla (2007) argue that individuals in virtual communities provide gifts to others in the form of information and such acts are taken in order to attain status within the community. Furthermore, Bolton, Katok, and Ockenfels (2004) argue that online markets, or virtual communities, focus on indirect reciprocity and how important one's reputation is in such communities being that it can directly impact one's future dealings online. Though Bolton, Katok, and Ockenfels (2004) approach the topic through a market-oriented mindset, they highlight a key component of virtual communities – namely that trust is vital to maintaining positive information flow and reputation is key if one has hopes of maintaining a positive presence in the virtual community of his or her choice. To that end, it is first necessary to understand what a community is and, more importantly, what a virtual community is and how it operates in terms of status amongst participants, leadership, goals, rules, and behaviors.

## **2.1 Community**

Foster (1996) indicates that community is built by a sufficient flow of “we-relevant” information, where the “we” (collective identity) is structured around others who are seen as being similar to the “me,” (individual). In this sense, community is not fully realized without understanding the self. In general, there are two major uses of the term “community;” the first is used in the territorial or geographical sense of community that includes neighborhoods, towns, cities, etc; the second sense of the term implies relational community, and is “concerned with the quality of character of human relationship, without reference to location,” (McMillan & Chavis, 1986). Though it has been noted that the two definitions are not necessarily mutually exclusive, McMillan and Chavis (1986) observe that modern society develops communities around shared interests and skills more than around locality alone.

McMillan and Chavis (1986) propose four criteria to define and propose a theory of sense of community. First, the definition must be understandable and unambiguous; second, it should be concrete with easily identifiable parts; third, it must represent the intimacy that is implied by the term “community”; and it should provide a dynamic description of the development and maintenance efforts that will be found in the experience. Based on these criteria, McMillan and Chavis propose the following four-element definition of community: a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members’ needs will be met through their commitment to be

together (McMillan and Chavis, 1986). This feeling arises from membership, influence, integration and fulfillment of needs, and shared emotional connections.

It is necessary to detail each of the four elements of this definition as it will serve to define virtual communities as communities in later sections. First, membership is the feeling of belonging. This implies that one has invested part of oneself and one's time and energy to become a member of a specific group or community, and therefore feels that he or she has a right to belong. Along with this, those who have not invested part of him or herself do not belong; these boundaries provide an emotional safety net that allows true feelings to be revealed and an intimacy between members to develop (McMillan & Chavis, 1986). If one must work to be a part of a group or community (i.e. by proving oneself to meet group standards), this strengthens group cohesiveness and boundaries between those in the community and those outside.

Next, although the members of the community influence the community or group and what it does, it is important to note that the group influences its members as well. McMillan and Chavis (1986) raise questions concerning influence and conformity. If a group exerts influence over an individual, does that mean that individuals are pressured to conform and therefore experience a loss of personal identity? Often, people attempt to escape conformity by finding communities that share personal interests and appreciate individual differences. If an individual feels as though he or she can contribute and influence the direction and goals of a community, the attraction to the group is greater.

The third component of the definition of community involves integration and the fulfillment of needs. Behaviors are reinforced and encourage group cohesiveness. This could be accomplished by reinforcing membership status, one's success within the community, or by broadcasting one's competence and capabilities within the group. Ultimately, while the individual's need to belong and feel part of a group is met, the group's needs are met as well.

Finally, members within a community share an emotional connection that is based on shared history (real or identified) and shared interests. The more the individuals of a group interact, the closer they are likely to become, increasing group cohesiveness and a shared sense of identity. Furthermore, the more positive experiences individuals share within the community, the bond between members will be stronger and less likely to break. The amount of time and energy invested also contributes to overall emotional connections by determining the group's importance to the member of the community's history and current status. The more investment one has placed in a community, the more important the community will be to the individual (McMillan & Chavis, 1986).

It is important to note that belonging to a community does not restrict an individual from belonging to others as well. As Wolf (1982) indicates, cultural groups or communities are not "hard and round billiard balls" that bounce off of one another and remain solidly intact; rather, they are permeable and made up of individuals who are simultaneously part of other interacting communities, societies, or cultures (Wilson & Peterson, 2002).



Communities can be large or small; small groups or clubs could serve as the transition between traditional societies and virtual communities. A club or small group (terms that will be used interchangeably) constitutes a group of people organized for a common purpose and may meet regularly – a book club, for example, that meets at the coffee shop once a week to discuss classic literature. While it is clear that there can be many subgroups within a culture and cultural elements of these groups can transcend the boundaries of interacting groups, it often is the case that cultural elements are experienced within the context of the small group (Fine, 1979). Fine (1979) argues that most culture elements are experienced as part of a communication system of the small group even if they are known widely. As such, it appears that every small group or club has a culture of its own (even if it is part of a wider community) that consists of a system of knowledge, beliefs, behaviors, and customs shared by members of the group to which members can refer and employ as the basis of further interaction (Fine, 1979). Members of these small groups or clubs recognize that they can share experiences and beliefs and expect that other members will both understand what is being shared and use it to further the social identity of the group. Furthermore, small groups and clubs can instill in their members habits of cooperation, solidarity, and public-spiritedness; moreover, membership in voluntary groups should increase face-to-face interactions between people and create an environment that develops trust amongst members (Stolle, 2001). Clubs serve to provide members with access to resources and services that may be unavailable to them individually depending on the purpose of the club and the goals of the members.

The cultures of such clubs and small groups result from social and environmental contingencies combined with social definitions as created by group interaction (Fine, 1979). Though there may be dozens of groups built upon a similar concept or area of interest, they must still be differentiated because of their shared experiences and meanings and ultimately the culture the group builds for itself. Small groups and clubs are ideal for observing the creation of cultural products, which are often created in group situations; informal cultural products like jokes, specialized vernacular, theories, and superstitions can develop as part of the natural interaction that occurs within a small group and may spread to similar groups if the cultural products apply (Fine, 1979). As will be seen in the discussion of virtual communities below, the concept of clubs or small groups and their cultural creation can be seen as a link between large and potentially vaguely-defined communities and the specific groups seen in the virtual world for several reasons. First, just as there may be several groups who meet to discuss classic literature, each group will be different due to the experiences and meanings created by its members; similarly, the Internet may host hundreds of groups that also discuss classic literature, but the type of individual the group appeals to, the format for book discussion, and the focus of content will vary between groups. Secondly, just as clubs are created to attract individuals with similar interests, virtual communities serve the same purpose but on a much grander scale. Rather than connecting individuals from the same town or same geographic location, the Internet serves to connect individuals from across the world. Third, whereas a club or small group may meet at a geographically convenient location to discuss club topics, virtual communities can meet as well –

just not in the same geographic location. These meetings can take place in the form of a regularly scheduled chat room session, for instance, or the approved-upon meeting time for a joint writing session in a Multi-User Domain. Finally, members in both in both clubs and virtual communities create a system of knowledge, beliefs, behaviors, and customs that serve to aid in the creation of culture and identity.

Though traditional communities have been studied for many years from a variety of scientific viewpoints, studying the concept of community in a virtual world is more difficult when a lack of hard and fast delineations between groups exists, such as online, and this issue is made more difficult with increased use of Internet-mediated communications.

### **2.1.1 Virtual Communities**

Communities have generally been defined as a group of interacting people who live and/or work in a common geographic location who are organized around common values. Though relevant, this concept of community does not take into account the idea of virtual communities and the interaction individuals receive within them. Virtual communities are typically emergent since they arise as a natural consequence of people coming together to discuss shared interests, personal experiences, or to develop relationships (Ridings, Gefen, & Arinze, 2002). As McMillan and Chavis (1986) describe, aside from geographical community, a community based on relationships, interests, and skills can exist as well. Virtual communities can be defined as groups of people with common interests and practices that communicate regularly and for some duration in an organized

manner over the Internet through a common location or mechanism (Ridings et al., 2002). Rather than meeting like-minded individuals in a coffee shop down the street, people now have the ability to meet hundreds, thousands, or millions of individuals with similar interests from all over the world. Wellman (1997) aptly sums up the concept when he states: “when a computer network connects people, it is a social network. Just as a computer network is a set of machines connected by a set of cables, a social network is a set of people (or organizations or other social entities) connected by a set of socially-meaningful relationships.” Social interaction was once defined by both spatial and temporal considerations; however, technological innovations have changed the nature of interpersonal interactions, providing more opportunities to interact with a huge number of people on a variety of topics. Users value such online communities because such settings make it easy and cheaper to communicate across large distances, provides almost endless opportunities for participation, enables people with minority lifestyles or interests to find companionship and counsel that might otherwise be unavailable in their physical communities of residence (DiMaggio, Hargittai, Neuman, & Robinson, 2001). “Community, like computers, has become networked. Although community was once synonymous with densely knit, bounded neighborhood groups, it is now seen as a less bounded social network of relationships that provide sociability support, information, and a sense of belonging,” (Wellman, 2001). Virtual communities are structured around ongoing conversations that are carried out through the exchange of texts among self-selected (though often varied) groups of

writers and readers. Almost all interactions are mediated by texts and require computer technology to communicate (Burnett, 2000).

Virtual communities can be classified by four characteristics: attributes, supporting software, relationship to physical communities, and boundedness. The attributes a community possesses can define a community and how it functions; for instance, common attributes such as having a shared goal or interest, intense interactions and strong emotional ties, shared activities between members, access to shared resources, support amongst members, and social conventions, language, or protocols, all serve to influence behavior of the community to encourage information sharing, communication, and continued interaction within the group (Lazar & Preece, 1998).

A virtual community can also be classified by the type of software or technology that supports it. Many communities are supported by using a listserve, a newsgroup, a bulletin board, Internet Relay Chat (IRC), or a Multi-User Dimension (Lazar & Preece, 1998). Other communities may utilize forums, computer games, or collaborative software like TeamRooms or CU-SeeMe, which allow text-based communication in addition to image or video communication as well (Lazar & Preece, 1998). The following five types of communities rely on varying technology for support, but tend to be the most common forms of virtual communities found online.

A listserve is similar to a traditional mailing list in that it allows for the widespread distribution of information to many users on the Internet. This usually includes a list of email addresses, subscribers who receive mail at those email

addresses, the publications or email messages, and a reflector, or a single email address that when sent a message will send a copy of that message to all of the subscribers. Various types of lists exist, and include announcement lists, discussion lists, or newsletter lists. These groups are often led by a moderator, who approves messages and screens for spams before emails are sent to the rest of the group. Moderators vary by group, with some being very actively involved in the group by helping direct discussions, answering questions, tasking people for research, and so on, whereas others may be more hands-off, emerging only when needed to handle particular situations as they arise.

A newsgroup is usually found within the Usenet system and is used by members to post discussion topics on groups of interest. These are essentially structured bulletin boards, and although they are technically simple, they create a complex social structure that continues to evolve (Donath, 1999). People participate in these groups for many reasons, including companionship, information-seeking, knowledge-sharing, and more. Information exchange is the basic function of this type of group – requests for information are common and answers are usually forthcoming. No editorial board exists to monitor posts and ensure certain standards are met; users within the group serve as their own moderators and appropriately censure individuals who do not follow group norms (Donath, 1999). Though a group may have an administrator, there is rarely formal leadership within the groups.

Internet forums grew out of newsgroups and bulletin boards, essentially the next step in the technical evolution of messaging systems. These web applications

manage user-generated content, usually on specific topics or areas of interests. While some forums allow anonymous posting, most require that an individual register to post as a way to verify age and agreement of the terms of service of the forum ("General Forum Usage," n.d.) Forums are governed by a set of individuals who are usually referred to as staff, administrators, or moderators, and these individuals are responsible for the maintenance of the forum, creation and enforcement of group policies and operating procedures, and lists that clarify the goals and rules of the forum ("Frequently Asked Questions," n.d.)

Internet Relay Chat (IRC) is a form of real-time Internet text messaging (or chats). Though chats often occur between individuals, IRC was designed for group communication in discussion forums (Oikarinen & Reed, 1993). Though it began with just a few channels meant to connect geographically dispersed groups, IRC networks serve hundreds of thousands of users with hundreds of thousands of channels at a given time.

A Multi-User Dimension or Domain (MUD) is used in online gaming as a real-time virtual fantasy world that is usually text based and incorporates many players at a give time. This medium combines role-playing and online chat functions to create an environment where users develop content, stories, and relationships with other players – essentially collaborative story telling. Many of these worlds involve fantasy settings like other planets or universes or fictional races (like vampires, werewolves, witches, elves, and so on). Most MUDs are run by players who are elected by others to help maintain game rules and prevent violations of group norms, and constitutes a hobby for most members. Members of these groups work

collectively to achieve some goal (explore a new world, complete specified tasks, finish the story, and more), and often share similar interests in terms of science fiction or fantasy, storytelling, and writing, for example. It is commonly understood that MUDs were the building blocks for online games such as Second Life or World of Warcraft – essentially evolved graphical MUDs. Games such as these maintain many similarities with MUDs, especially in terms of collaborative storytelling, achieving certain goals as spelled out by the game, and interacting with other users via chat functions.

A message board is a type of Internet forum in which people hold conversations (sometimes many at a given time) on various topics through posted messages. The terms “message board” and “forum” are often (and will be throughout this report) used interchangeably. Unlike chat rooms, the conversations do not occur in real-time. Rather, they are posted to a common website where, depending on how the message board is set up, members and nonmembers can view the content. A message board is hierarchical in structure in that a board may have any number of subforums in place for specific topics. Each topic or new conversation that is introduced is called a thread and people may respond either to the main thread or to any comment made on the thread after the original posting in the form of posts, or a user-generated message on a given topic that displays the poster’s information and the time and date in which it was posted to the group. The number of posts to a certain thread can determine how popular a certain thread was to the group. Most message boards allow for attachments and pictures, though they may first be evaluated by a group’s moderator and/or administrator to ensure the



pictures/content of the attachment subscribe to group rules or norms of behavior. Like most virtual communities, each group will establish its rules for conduct and behavior from group members. If a user violates the rules, he or she could be censured, have posts removed, or be removed from the group.

Though each form of technology offers insight into the inner-workings of virtual communities, message boards were selected to conduct this research for several reasons; first, depending on the message boards that are selected, many experience high traffic of posts and posters, which provides a large data set from which to analyze the research question. Additionally, because the conversations do not occur in real-time, a historical record of threads and conversations is created for review. This allows researchers to update data daily if one desires, as opposed to monitoring the community constantly, which would be difficult and time-consuming.

In addition to attributes of a community and the software/technology used to support it, a third characteristic that can be used to classify online communities is by its relationship to physical communities (Lazar & Preece, 1998). Though online communities may be based on traditional communities in terms of physical location, many transcend geographic constraints and incorporate members from all over the world.

Finally, the fourth characteristic that can be used to classify online communities is boundedness, or the sociological concept that relates to how many social relationships remain within the defined population of a group or a community (Lazar & Preece, 1998). Communities can be tightly- or loosely-bounded, where in a

tightly bounded group, most of the communication takes place among members of that community, and in a loosely bounded community, community members have more social ties with people outside of the specific community (Wellman, 1997). Boundedness can be decided by the members themselves; if a group would like to remain tightly bounded, it could require registration as a method of preventing others from joining (Lazar & Preece, 1998). More so, the size of the group can determine the boundedness that is experienced by group members; smaller groups allow for more intimate communication and recognition between members, and creating and maintaining dialogues should be easier with smaller numbers. While larger groups may be more inclusive or call for less stringent membership requirements, they may also prohibit intimate discussions and member recognition amongst all participants.

Although some researchers argue that virtual communities are nothing more than “pseudo-communities” or should only be considered as “metaphors for communities,” most believe virtual communities are “real” communities because the participants believe they are communities (Blanchard & Horan, 2000). A virtual community is “geographically dispersed with members participating due to their shared interests in a topic and not their shared locations,” (Blanchard and Horan, 2000). Virtual communities can further be defined as “groups of content-creators sharing a common interest which manifests itself as a set of web pages,” (Kumar, Raghavan, Rajagopalan, & Tomkins, 1999). Though members of these communities may never meet each other, like long-distance relationships or pen pals, the possibility exists if a strong relationship is formed. Online environments do not

necessarily comprise a completely separate reality, but are best considered to be an extension of real-life interactions and communities (Livelsberger, 2009). Perhaps instead of knowing someone as “Bob” or “Kate,” community members are known by screen names and avatars, both of which provide virtual faces to names and a sense of familiarity amongst members. Livelsberger (2009) describes this familiarity as “immobile socialization,” or the process and ability to interact with others without leaving one’s home.

Though this concept defies the traditional definition of community, online groups are comprised of like-minded individuals with similar interests working cooperatively to formulate knowledge and share ideas. While virtual communities may be characterized as “voluntary, temporary, and tactical affiliations,” they nonetheless form on the basis of common intellectual pursuits and emotional investments into both the topic at hand and the other members (Livelsberger, 2009). One opts in and out of many communities, each which exhibits its own set of norms and values. Participating in each of these communities requires that the individual make personal adjustments (Foster, 1996). In addition to that, individuals invest time and energy into the groups of their choice as a way to fulfill needs and foster a shared emotional connection with others. As McMillan and Chavis (1986) indicated, the more an individual invests in a community, the more connected he or she will feel to the success of the group.

Kumar, Raghavan, Rajagopalan, and Tomkins (1999) further pare virtual communities into explicitly-defined communities and implicitly-defined communities. Explicitly-defined communities include groups of individuals who

share a common interest through most popular webpages on the topic. Such groups are often broadly defined (like “Major League Baseball” or “classic car restoration”) and congregate in popular newsgroups, web rings, resource collections, or email lists. Though these groups are what most people think of when discussing online communities, explicitly-defined communities are far outnumbered by implicitly-defined communities. These groups often are very narrowly focused and center on a level of detail that is far too detailed to attract the interest and resources of larger communities. They are often newer or developing communities that are beginning to build the interest of devoted individuals (Kumar et al., 1999). Understanding that these smaller communities exist is important for several reasons; first, these communities often provide valuable information resources on specific topics for users interested in those specific topics. In such small communities, it is not as common to find flammers (individuals who intentionally mislead a group and/or try to elicit shock or negative feelings from members through insults), and the information may be more reliable. Next, implicitly-defined communities “represent a sociology of the web: studying them gives insights into the intellectual evolution of the web;” and finally, portals (such as search engines) that can identify and distinguish between the groups can target advertising at a more exact level that targets interests of the groups (Kumar et al., 1999).

### **2.1.2 Formal Rules**

Though groups of all types, sizes, purposes, areas of interest, and goals exist on the Internet, several characteristics are common across most groups (but not

guaranteed). For most groups, a constitution or a set of the rules of engagement exists. These rules establish the general guidelines of the group and serve as the standard against which group members' behaviors are judged, particularly when a member is seen as stepping out of line or violating a rule of the group. Rules vary across groups, but common ones could include a ban against flaming or trolling (intentionally posting a message with purposely incorrect information, hoping to lure someone into posting a correction or a negative response that could potentially lead to admonishments from established community members), declaring certain topics (like politics, legal action, or more) off-limit for discussion or limiting the scope of discussion to a certain topic of mutual interest (Burnett, 2000). Some communities may require active participation, while others tolerate lurking. These ground rules are meant to foster a sense of shared community, and that requires that members are sympathetic to the ideas the group is based on, thus it is generally necessary to lay some fundamental common ground. Even if participants do not agree with the ground rules, breaking them could lead to negative consequences, like scolding from other members, being ignored, or even removed from the group (if the infraction is serious enough). Furthermore, trust in the shared motivations and beliefs of the other participants to the goals and missions of the group is essential to creating that sense of community (Donath, 1999).

Furthermore, it is common for different groups to develop their own languages, so to speak. Aside from the usual netspeak that is relatively common to most groups (e.g. LOL, IMHO, BTW, etc), specific groups may develop specific terms that accompany a specific topic. Examples can be found in any number of groups;

Donath (1999) provides several examples of topic-specific acronyms such as ONNA (Oh No Not Again) in a Usenet group dedicated to surprise pregnancies, and MOTB (Mother Of The Bride) in a Usenet group dedicated to wedding planning. By using such phrases in these groups, an individual essentially expresses his or her association with and loyalty to the group. Donath (1999) compares this to moving to a new region of the country and picking up the local slang and accent as a way to fit in and reduce one's association as being an outsider.

### **2.1.3 Types of Virtual Communities**

In order to clarify the following discussion regarding virtual communities, it is vital to delineate between two major types of virtual communities: institutionalized virtual communities, and self-emerging virtual communities. Institutionalized virtual communities are organized by an external force (such as an organization) in order to accomplish a specific goal in a specific timeframe. Such groups or communities are directed by a formal leader whose goal is to develop and shape team processes, as well as monitor and manage group performance and behaviors, and correct if needed (Bell & Kozlowski, 2002). Leaders may be supervisors, managers, or executives, and have the power and ability to "hire or fire" members of the group who are not seen as performing up to standard, that is bringing in new members or removing current members when desired. While participation in an institutionalized virtual community may be voluntary, it can also be directed from above, which imposes company or organizational values, goals, and missions onto the virtual community.

The focus of this paper will be self-emerging virtual communities. While much research has been conducted on institutionalized virtual communities, much less has focused on self-emerging virtual communities. These groups are often created by an individual or individuals with specific interests who hope to meet like-minded individuals to further knowledge sharing and/or creation, start dialogues on topics of interest, and maintain a community of members. Formal leadership of group discussions or formulation of missions or goals is rare, and informal or collective leadership is more common among such groups. There is no finite timeline for these groups, and they will continue until interest in the topic fades.

#### **2.1.4 Self-Emerging Community Formation**

These self-emerging virtual communities whole purpose is to create, expand, and exchange knowledge of the group while developing individual capabilities at the same time. Individuals are self-selected into such a group based on personal expertise or passion for a topic. The boundaries of such groups are usually fuzzy, and what often holds them together is the passion, commitment, and identification with the group and its topic of expertise. Such groups often last for as long as they continue to evolve and produce knowledge; if they do end, they end organically and last as long as there is relevance to the topic and value and interest in learning jointly with other like-minded individuals (Peachey, Gillen, and Ferguson, 2008). These communities are different from traditional organizations and learning situations in that they experience different levels of expertise that are simultaneously present in the community; fluid peripheral to center movement that

symbolizes the transformation from novice to expert; and completely authentic tasks and communications (Johnson, 2001).

Such communities are often informally bounded together by shared expertise and passion for a given topic. Because they are most often self-organizing, self-emerging virtual communities resist supervision and interference, particularly from those outside the group and non-participating members (Wenger & Snyder, 2000). Because they are informally organized, they set their own agendas, establish their own forms of leadership (usually promoted from within the group), and focus on topics that are personally interesting (Wenger & Snyder, 2000). Wenger (1998) indicates that this type of community defines itself along three dimensions: first, it is a joint enterprise as understood and continually renegotiated by its members; second, it functions by the relationships of mutual engagement that serves to bind its members as a social entity; and finally, it produces a shared collection of resources and symbols that are developed over time and serve as identifiers of the community.

These communities develop around the things that matter to the participating members, which results in practices that reflect the members' understanding of what is important (Wenger, 1998). Although outside influences can manipulate or change this understanding, the members of the community of practice will develop practices in response to these external influences that reflect the community core values.

Virtual communities function as communities of practice in that they are self-organizing systems that are maintained through shared interests and dedication to



the creation and maintenance of knowledge of certain topics of personal interest. Such communities of practice are also referred to as distributed communities of practice, which are comprised of individuals who form a group who are “geographically distributed individuals who are informally bound together by shared expertise and shared interests or work,” (Daniel, Schwier, & McCalla, 2003). Members within such communities depend on information and communication technologies to connect to each other. Key features include a reasonably stable membership, high degree of individual awareness and one’s contributions and place within the group, informal learning goals, common language and high shared understanding, loose sense of identity, no formal distribution of responsibilities, and a life span that is determined by the value the community provides to its members (Daniel, Schwier, & McCalla, 2003). Participation is voluntary, and those who choose to participate are aware of the social norms and goals of the group and adhere to the norms that have been established by the group.

## ***2.2 Virtual Community Egalitarianism***

One key feature of online communities is that, in general, they foster equality of status and participation among members, strengthen weak ties, and encourage multiple, partial relationships (Blanchard & Horan, 2000). Because many of the traditional social cues about identity are absent from online communities (such as deportment, carriage, speech, age, and so on), identity and reputation are key in virtual communities as the primary method for understanding and evaluating any interaction that occurs online (Donath, 1999). Such social markers generally

influence interactional patterns between individuals; however, if these clues are not available, participants are able to move beyond the normally fixed differentials one might find in face-to-face interactions, and pursue areas of interests and contact people he or she might have avoided before (Peachey, Gillen, & Ferguson, 2008).

Virtual communities are often described as being egalitarian in nature, though this is often done with a business-oriented mindset or as a result of perceived democratic actions or gift-giving processes viewed within a community (e.g. Bolton, Katok, & Ockenfels, 2004; Giesler, 2006). It will be seen, however, that virtual communities reflect traditional egalitarian societies at their most fundamental levels for several reasons. To understand the concept of egalitarianism in terms of virtual communities, it is necessary to review basic anthropological literature on egalitarian societies first. "At the heart of an egalitarian society is a fundamentally egalitarian economy based on principles of reciprocity," (Flanagan, 1989). Foragers are often used as a prime example of egalitarianism due to their collective ownership of the means of production, reciprocal right of access to resources, lack of emphasis on accumulation, and restriction of individual ownership to possession of tools (Flanagan, 1989). Woodburn (1982) describes basic tenants of egalitarian societies, or "immediate-return systems." The social organization of such societies share similar characteristics, namely that social groupings are flexible, that individuals have a choice of whom they associate with, and that relationships between people stress sharing and mutuality but not necessarily involved long-term binding commitments and dependencies (Woodburn, 1982). These societies systematically eliminate distinctions of wealth,

power, and status, and generally do not tolerate inequalities in these areas. Among the Hazda, for example, anyone may live, hunt, or gather wherever he or she would like to do so for camp units are not fixed in nature, and people may come and go as they please. If one is unhappy with the situation within a camp, he or she can express his or her unhappiness by leaving the group for another (Woodburn, 1982). Like the Hazda, online communities are voluntary in nature and participants can choose to leave a group for any reason; participation is not governed by an overarching hierarchical structure, and if a group's norms or values do not coincide with an individual's, he or she is free to seek one that does.

Furthermore, in egalitarian societies, individuals have direct access to ungarnered resources – free and equal access to wild foods, water, and various raw materials needed for food, shelter, tool, and weapon production. Core members and newcomers share alike, and anyone with a link to the community shares the same as everyone else. Without having to ask permission from anyone, individuals in such societies are able to set and obtain their own resource requirements as they see fit. More than that, the process of production is generally not controlled or directed by the household head (if there is one), and there is no dependence upon others for access to resources (Woodburn, 1982). Similarly, virtual communities also have generally free and equal access to resources on the Internet. Information is not constrained, groups are usually open for new members to join and participate, and if leaders are present, such leaders are usually fluid and context dependent. Peachey, Gillen, and Ferguson (2008) concluded that leaders within online communities like Second Life were empowered by their own in-depth pre-existing knowledge and

understanding of the specific subject at hand. Though these individuals may not be considered leaders in everyday life, these online environments allowed them to step up to contribute their expertise to the group. Such leaders, however, did not dictate the direction and content of discussions, but merely provided encouragement to other members and created potential frameworks for guided discussions (Peachey, Gillen, & Ferguson, 2008). Individuals who wanted to participate could do so; those who wanted to observe could do so as well.

Sharing is another key attribute of egalitarian societies. While opportunity is equal in such societies, this does not guarantee equality of yield. In societies like the Hazda and the !Kung, the majority of hunting is performed by a small proportion of men within the group. This could open the door for the development of inequalities, but leveling mechanisms are employed at this point to prevent an abuse of power (Woodburn, 1982). Those that take advantage of the system are often brought back in line with the group norms through leveling mechanisms such as self-depreciation, attributions of success to luck, and social ridicule. In a virtual community, those who violate norms and attempt to mislead others within the group are often labeled as trolls, or troublemakers, whose goal is to intentionally put bait out in the group and watches the fights that often ensue (Donath, 1999). This information is often misleading and is meant to damage the trust of the group through deception in order to gain some sort of upper hand. Such individuals are usually called out in public and labeled as a troll (which is quite damaging to one's online reputation), bombarded with angry accusations, and asked to leave or kicked out through mutual agreements of the group members (Donath, 1999; Dibbell, 1993).

The Internet allows individuals to have an equal voice, or at least an equal opportunity, to speak and contribute to on any number of topics that may interest the individual (Foster, 1996). This relatively egalitarian nature of online interaction can be empowering for those with disenfranchised social “stigmas” because there is little overt communication about one’s gender, age, race, ethnicity, lifestyle, socioeconomic class, organizational position, or membership to specific groups (Wellman, 1997). When one chooses to participate in a group, these voluntary relationships are generally based on the shared interests and specialized knowledge of group members. Normative social behavior is managed and enforced by group pressure and influential individuals within a community to ensure that the participants are working together towards well-defined collective goals and knowledge production (Wellman, 1997). While this is true for tight-knit bounded groups, there is less social control in unbounded networks due to their weak interconnectivity. The greater fragmentation of such networks allows individuals to avoid portions of the network where they feel unwanted or that their ideas are not appreciated.

Egalitarianism depends on prosocial behavior for continued existence; Penner, Dovidio, Piliavin, and Schroeder (2005) provide a multilevel perspective on prosocial behavior, which is defined as behaviors that are defined as being generally beneficial to other people. This perspective is taken because it recognizes the diverse influences that promote prosocial behaviors towards others. These three levels are useful to understand in the context of virtual communities as they provide

a foundation for knowledge creation and exchange with others on the Internet, many of whom may be strangers.

The micro level of analysis examines the origins of prosocial tendencies. Drawing heavily upon evolutionary theory, biological and genetic bases of action, and developmental processes, it is possible to understand why prosocial behavior continues today. Evolutionary models indicate that prosocial behaviors exist because humans exhibit genetically based predispositions to act prosocially due to the evolutionary success of people who displayed such behaviors (Penner, Dovidio, Piliavin, & Schroeder, 2005). Though kin selection helps explain the propensity to see prosocial behavior between relatives, it does not explain prosocial behaviors directed towards unrelated individuals. To do this, the concept of reciprocal altruism was proposed; according to Trivers (1971), humans derive some evolutionary benefit from helping someone who is unrelated because it is expected that the favor will be repaid at some point in the future. People are more likely to help those who have offered help before, and offering to help someone else serves as a boost to one's status and reputation among members of one's community (Penner et al., 2005). Sharing knowledge is seen as a form of altruistic behavior because there is little cost associated with providing the knowledge to someone else, while that information could provide great benefits to the receiver of the information (Trivers, 1971). Virtual communities serve to connect large groups of unrelated individuals based on shared interests; the concept of reciprocal altruism helps explain why virtual communities continue to exist and grow despite consisting of members who are unrelated. When a member of an online community offers

advice or research, or contributes to a discussion, he or she does so knowing that in the future, the favor will likely be returned when he or she poses a question or needs advice. Such an altruistic act provides little to no threat the individual who provides the information, thus making it a low-threat contribution; however, providing such information to others could serve to increase the poster's social capital within the group, thereby increasing one's prestige among community members.

The macro level of analysis examines helping behaviors performed by individuals within an organizational or group context, including volunteering and cooperation. Cooperation differs from volunteering prosocial interaction in that the parties involved are considered equal; this concept involves two or more people working together as partners towards achieving a common goal that benefits the individual as well as the whole group, even if indirectly (Penner et al., 2005). Even if it was an individual within the group who posed the question and benefits the most from receiving an answer, the group benefits as well – another member may have had a similar problem but was unwilling to reach out for help; a future member may experience similar issues and be able to read archives of past discussions to benefit from the answer as well; or a member who did not need the information for him or herself may be able to provide that information to someone else in another group. Though defectors within a group may exist, it is clear that all individuals are better off if they cooperate. Because most virtual communities are brought together by shared interests and working towards the same goals, whether that is knowledge creation, transference, dialogue, advice, empathy, and so on, members are

encouraged to cooperate to derive the greatest benefit from the group. Those who detract from the group or purposely violate group norms or are seen as not cooperating may be reprimanded, ignored, or removed from the group.

The meso level of analysis examines helping behaviors at the interpersonal levels; this is particularly useful to understand as much interaction in virtual communities is not only among the group at large, but also between individuals within the group. Because people are motivated to maximize rewards and minimize costs, individuals will be more likely to help others if the perceived costs are low (Penner et al., 2005). Offering advice in an online community is a relatively low-cost event given that the information is easily verified (or verifiable) and helpful to the individual in need of advice. Though this explains when an individual may help another, it does not explain why. Three mechanisms are usually seen as encouraging prosocial behavior, including learning, social and personal standards, and arousal and affect, which states that people are aroused by the distress of others, and people are motivated to behave in ways that alleviate this distress (Penner et al., 2005). Furthermore, one is more likely to help someone else that belongs to one's own group; this in-group bias facilitates a sense of "we," and ultimately empathy, which in turn leads to more prosocial behaviors.

Smith (2010) argues that indirect reciprocity helps to explain such actions as well. Indirect reciprocity is used to "describe cases where cooperators are preferentially chosen as partners by third parties who learn of their cooperative nature with others." In this situation, an individual's reputation is enhanced if he or she is seen as someone who will cooperate with others and extend prosocial



behaviors to others within the group. In this light, prosocial behavior is a method in which individuals achieve status and prestige, a form of leadership commonly found within egalitarian societies. Henrich and Gil-White (2001) argue that prestige is synonymous with influence, which is the mark of an effective informal leader. Prestige is often achieved through expertise; a person who is seen as being adept in a particular skill is afforded more respect than those who do not demonstrate skill or expertise in a valued activity. A person who has earned prestige is very often listened to and their opinions are given significant weight (though not necessarily obeyed) because this person enjoys good standing in the general opinion of group members. Prestige rests on merit in the eyes of other members of the group, promotes admiration from inferior members, and inspires a desire for proximity as well as periods of sustained observation from others (Henrich & Gil-White, 2001). It is important to note that individuals with prestige are not feared or seen as dominant (like formal leaders are), but rather other members have determined that such individuals have earned the right to at least have their opinions considered more carefully than the average group member. They are viewed as having authority due to their ability to behave skillfully and knowledgeably, though perhaps not power (implying the ability to force or coerce adherence by other members).

In traditional communities, those with considerable prestige are popular, and their followers attempt to remain close and interact often with them as a way to “pick up” clues regarding the individual’s skills, abilities, and knowledge so that the followers can eventually reproduce these actions on their own. Though members in

an online community cannot literally remain in close proximity with prestigious individuals, they can do so electronically by reading posts and opinions by the prestigious individuals, engaging the individual in dialogues, asking for advice from the individual, or continuing a one-on-one dialogue outside of the chat room, perhaps even offline. In a virtual community, information goods (such as knowledge, advice, and so on) are a viable substitute for tangible goods (such as meat in traditional hunter-gather societies). More to the point, ideas, values, and opinions of prestigious individuals are likely to be copied in a virtual environment, and this can be seen in the number of people who read the prestigious individual's posts or opinions or advice, who seek out and pay deference to these highly skilled or knowledgeable individuals in exchange for copying access (Henrich & Gil-White, 2001). A traditional example concerns the hunters in the Kalahari; "although no one is in command, an informal leadership may develop and parties tend to form around good hunters," (Henrich & Gil-White, 2001). Regardless of whether the skill is tangible like hunting or information-based like expertise on a given topic, this tendency to copy tends to make prestigious individuals more influential as people copy, internalize, and promulgate those opinions to others within and outside the group.

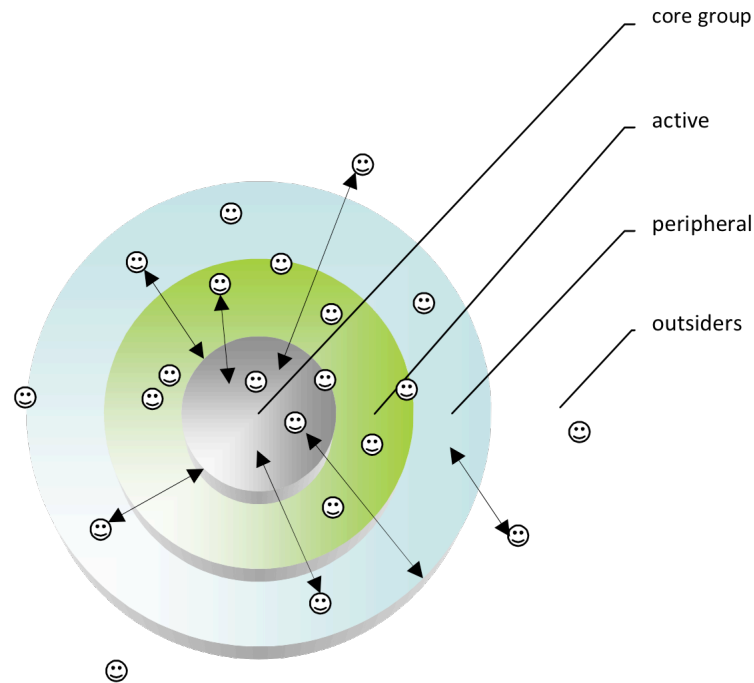
Interestingly, it is not uncommon for a prestigious individual's influence to extend beyond his or her area of expertise; it is often assumed by others that expertise or ability in one domain promotes success in others. If an individual does in fact possess assets that would be valuable within a community, it is beneficial for both the expert and the other members to exchange the knowledge or skills for

deference. If this sharing behavior provides useful benefits at a low enough cost, it is likely that these behaviors will be repeated, both from the prestigious individuals and those who defer to their expertise (Henrich & Gil-White, 2001). However, if an individual is highly regarded within a virtual community, great social pressure may exist that prevents other members from questioning or contradicting this individual's statements. This type of behavior further entrenches the high status this individual has by essentially eliminating competition or input from others.

Though issues of sexual equality and ageism are often noted in discussions of egalitarian societies (e.g. Lee, 1978), it is difficult to assess and attribute behavior in virtual communities based on traits such as these simply because it is difficult at best to verify one's actual identity in the online world. As a result of the anonymity inherent in virtual interactions, how an individual interacts within the community and the information he or she provides becomes the method in which an individual is judged. Therefore, it is vital to understand virtual community interactions and what they mean to a group's members.

### ***2.3 Virtual Community Interactions***

At the most basic of levels, behaviors within virtual communities can be divided into two main categories: interactive and non-interactive (Burnett, 2000). Burnett (2000) provides a typology of virtual community interactions that provides a basis for understanding online behaviors and interactions seen in a variety of virtual communities. More than that, this typology helps clarify how information is exchanged and how participants interact within online communities.



**Figure 1: Degrees of Community Interaction (Peachey, Gillen, & Ferguson, 2008)**

Figure 1 provides a graphical depiction of the degrees of community interaction. The white represents outsiders, those who are not actively or inactively participating in a virtual community. The blue represents the peripheral, or those who may lurk in a virtual community, not actively participating, but maintaining an awareness of the community and its participants. The green represents the active members of the community, the rank-and-file members who contribute to dialogues, engage others in conversations, answer and pose questions, and so on. Finally, the silver represents the core members of the group, members who could be considered informal leaders and those who have earned the respect of other members in each level. These leaders often engage in prosocial behavior (see “Virtual Communities and Egalitarianism”) and contribute their knowledge and expertise

to the group. Burnett's (2000) typology of virtual community interactions can be seen in each level of community interaction.

Whereas most behaviors found online can be considered interactive to some degree, the primary non-interactive behavior that is seen in virtual communities is often referred to as "lurking," which is the act of reducing one's participation to the passive role of a reader rather than participating in discussions through writing. Lurking in online communities differs from face-to-face encounters because while listeners in a face-to-face encounter are still considered to be active participants in that conversation, they are essentially invisible in a virtual community since they can remain in a virtual community and leave no obvious signs of their presence. Lurkers often represent the largest portion of a community's population. Though they do not actively participate, lurkers are still an important population within virtual communities because by reading what others have written, they engage in specific and active information-gathering activities, which may encourage them to write themselves and pass on their learned information and knowledge to other groups at a later time (Burnett, 2000).

However, in order to actively interact in a virtual community, members must post, write messages, and read what others have written (Burnett, 2000). Burnett (2000) divides interactive behaviors into two fundamental types: hostile interactive behaviors and collaborative or positive interactive behaviors. This classification serves as the basis upon which this research builds as it studies virtual communities and analyzes communication patterns.

### 2.3.1 Hostile Interactive Behaviors

Though a good deal of online interactions within communities could be considered constructive and information-seeking/producing, it must be noted that not all online interactions are friendly or civil or promote knowledge production or promulgation (Burnett, 2000). Such hostile behaviors include flaming, trolling, spamming, and cyber-rape.

Flaming is the most common form of hostile behavior and is “simply online ad-hominem argumentation, aiming neither for logic nor for persuasion, but purely and bluntly as insult,” (Burnett, 2000; Donath, 1999). Aside from insults, flames can also be snide or cutting observations or intentional misdirects (Donath, 1999).

Trolling is another hostile behavior found on the Internet, and is often the cause of flamewars. The goal is to instigate arguments and then sit back and watch what ensues. An individual intentionally posts a message with intentionally incorrect information, hoping to lure a newbie into posting a correction, which could potentially lead to admonishments from established community members (Burnett, 2000). A user in a Usenet group explains trolls to the group with a fishing metaphor:

Are you familiar with fishing? Trolling is where you set your fishing lines in the water and then slowly go back and forth dragging the bait and hoping for a bite. Trolling on the Net is the same concept – someone baits a post and then waits for the bite on

the line and then enjoys the ensuing fight (Donath, 1999).

Spamming is a hostile behavior that moves beyond the community's shared area of interest and delivers unsolicited junk messages. Though most people think of spamming as delivering junk emails to one's inbox, it occurs when individuals (usually not participants of the community) post comments or advertisements for products/services that fall outside the group's area of interest. Burnett (2000) provides the example of two lawyers who posted advertisements for their services all over thousands of groups' pages, regardless of topic, area of interest or receptivity to advertising. Spammers, who will post content regardless of group norms or wishes, often ignore the implicit rules of groups who prohibit advertising or off-topic conversations.

The most extreme hostile behavior occurs in the form of "cyber-rape," which is like a flame in that it is directed at a specific person and also like spam in that it is unsolicited and unwelcome (Burnett, 2000). The most prevalent instance of cyber-rape occurred in the multi-user domain (MUD) LambdaMOO; in this instance, a player in the MUD ran a "voodoo doll" subprogram that allowed him to falsely attribute his actions to other characters (Dibbell, 1993). These actions (which included describing explicit and violent sexual acts that characters performed on each other) went way beyond the community norms and lasted for several hours. These actions were interpreted as sexual violations of the avatars that were made to act sexually against their wishes, and incited

outrage among members. Some were described as being traumatized, angry, and considered the event a breach of civility (Dibbell, 1993).

### **2.3.2 Collaborative Interactive Behaviors**

Though hostile behaviors are discussed more often because of the shock value and indignation often associated with such actions, the majority of behaviors found on the Internet could be considered collaborative interactive behaviors. Burnett (2000) describes two predominant types of collaborative interactive behaviors: behaviors not specifically oriented towards information, and behaviors directly related to either information seeking or to providing information to other community members.

Three general types of activities can be considered behaviors that are not specifically oriented towards information, including neutral, humorous, and empathetic behaviors. Neutral behaviors include pleasantries and gossip; just like with face-to-face gatherings, participants in virtual communities spend some of their time engaging in small talk, which can include semi-ritualized pleasantries (greetings, well-wishes, etc), and other types of formalized exchanges used to keep participants informed (like status reports) (Burnett, 2000). Such behaviors essentially serve to keep the community informed on how one is doing, provide information on other members and nonmembers through rumor and gossip, and discuss other topics of concern that may not directly correlate with the area of interest of the virtual community, but is nonetheless important to participant interaction.



Another type of behavior that is not specifically oriented towards information includes humorous behaviors such as language games and other types of play. Like many face-to-face interactions, interactions between participants in a virtual community can be light-hearted and playful as well, which serves to help build the sense of community that one experiences online. These playful behaviors, experienced through exchanged texts, include punning, deliberate non-sequiturs, riffing on particular ideas or phrases, and the use of abbreviations. The third type of behavior that is not oriented towards information includes empathetic behaviors that provide emotional support to members and participants (Burnett, 2000).

Though most groups provide emotional support to its members to some degree, some groups have been created for the sole purpose of providing support to specifically defined groups of users, like survivors of sexual abuse, parents with children who have special needs, and so on. While information may be exchanged on certain topics, the supportive and welcoming environment created by such empathetic behaviors provides a strong draw for members to participate. On message boards, for instance, it is common for an individual to share a recent experience with the group in a post that may elicit a sympathetic or empathetic response from other group members, thus adding several additional posts to what has now become a thread. Someone may share bad news such as family troubles or the passing of a pet or they may share good news such as the birth of a baby or the rescue of an animal from the shelter.

More often than not, active participants in the virtual communities are quick to respond with supportive words, advice, or helpful information.

The second category of collaborative interactive behaviors includes specific information-oriented behaviors, where both active members and lurkers participate in a given community as a way to locate and discover sources for the type of information they may be interested in. While some of these behaviors are passive, like lurking, others are more active and serve to create a dynamic information-sharing environment through discussions within the community. Burnett (2000) divides these information-oriented behaviors into three categories: announcements, queries or specific requests for information, and directed group projects.

Announcements are common in virtual communities; because making announcements functions as a fundamental method for sharing information, many posts within virtual communities can be considered a form of announcements whose goal is to inform other participants within a community of information that is of potential interest to others. According to Burnett (2000), people who share information through making an announcement do so in the spirit of exchange and rather than simply giving the information away to everyone, they will instead exchange it for information by could be held by others within the group. Though virtual communities do not utilize a highly structured or formalized economy of information exchange, information is given and accepted freely as a type of “gift economy,” (Burnett, 2000). This concept of gift economy is prevalent, and has been referenced often when discussing

hackers and their predilection towards open source licensing and the sharing of information.

Queries or specific requests for information comprise a large part of online interactions. When queries are made by members of the community, everyone benefits, including the individual who posed the question (assuming it is answered), the lurkers who receive access to the answers by being members of the community (however passively), and the members who answered the query (through a gain of social capital and status). If the answers are not available within the community, participants within a virtual community can pose their query to a larger audience outside the virtual community and look elsewhere on the Internet or with traditional information sources like face-to-face contacts (Burnett, 2000). Though an individual who has gone outside the virtual community can share the information they learn with the group, it is not required and may in fact remain unknown to the community members. However, participants tend to maintain an awareness of useful Internet sources that may fall outside the virtual community, and keep other members informed by making announcements or through answering specific queries related to such sources. Queries that are presented to the community as a whole in the form of a question are the clearest type of explicit information behavior seen within a virtual community. These queries highlight much about the group, including the knowledge of the members, their ability to answer queries and provide accurate information, and the different approaches that are taken when answering questions (Burnett, 2000).

The final type of information-oriented behavior that Burnett (2000) discusses concerns directed group projects. Though many discussions in a virtual community may consist of little more than talk, such discussions have the potential to lead to group projects designed to support the interests and information needs of the community and potentially impact those outside the community as well, as highlighted by examples that include fundraisers and political activities (letter-writing campaigns, civic actions, etc) (Burnett, 2000). A common example includes FAQ documents that serve to outline the expected norms of the group, but provide great amounts of information about the community's area of interest. Efforts like these that are meant to mobilize members to do more than talk to one another ultimately seek to enhance the community's information resources and influence not only the community, but those outside the community as well.

Though many of these self-emerging groups function on a day-to-day basis without the presence of formal leadership, it must be noted that leaders can and do exist within egalitarian societies and, in this case, virtual communities as well. Though a leader may not be formally recognized as one or carry a title, it is clear that leadership and guidance is sometimes necessary in order to maintain a group's livelihood or minimize a threat. The following discussion on leadership in virtual communities highlights the egalitarian nature of leadership in virtual communities.

## ***2.4 Leadership in Virtual Communities***

Leadership is an oft-debated concept that includes a variety of definitions that often overlap with management concepts even in traditional groups. As previously discussed, Henrich and Gil-White (2001) argue that prestige is synonymous with influence, which is the mark of an effective informal leader. If someone has exhibited skills and earned prestige and status, it is more likely that he or she will enjoy the benefit of having their opinions, ideas, suggestions, and advice heeded more often than others within the group. Because prestige and status of an individual is determined by others within the group respecting an individual for a given reason (skill, age, wisdom, etc), it is likely that despite not being feared or having the authority to force compliance, other group members view this individual as having earned enough respect to provide additional weight to his or her opinions or suggestions (Henrich & Gil-White, 2001). While high prestige may excuse individuals from certain obligations and aid them in obtain certain privileges within a group, at the point where the individuals begin to act as though they are entitled to special treatment, they begin to lose status, respect, and influence over the group. Much like informal leaders, believing too strongly in one's position could result in the loss of respect from others, ultimately resulting in a loss of status and informal leadership status. Furthermore, though leadership is often not explicitly seen in egalitarian groups on a daily basis, good leaders are more likely to arise in times of crisis, such as under threat of war or food shortages, and are often seen as being "generous, brave in combat, wise in making subsistence or military decisions, apt

at resolving intragroup conflicts, a good speaker, fair, impartial, tactful, reliable, and morally upright, (Boehm, 1993).

Like egalitarian hunter-gatherer societies, virtual communities often depend on this informal leadership, which is predicated on the status or prestige of the individual perceived as the leader; this could be the moderator or a subject-matter expert within the group. As previously mentioned, because these leaders often lack formal power and the physical means to dominate others or cut off other's access to resources, particularly in an online environment, they must lead by authority and by proving themselves through repeated acts of exemplary performance. According to Boehm (1993), members of egalitarian societies are often ambivalent towards their leaders, wanting them to possess the ideal leadership traits (such as strength, decision-making skills, being a good speaker, fair, impartial, tactful, and morally upright) while at the same time expecting a lack of aggressiveness, self-aggrandizement, and avoidance of prominence. For example, the Arapahoe "expected their chiefs to be strong with whites, but humble at home, while the chiefs hated their own unassuming role. Cuna valued the office but regularly criticized the person holding it." Because a leader who is someone to potentially fear, members of egalitarian societies employ leveling mechanisms to "whittle [leaders] down to their level," (Boehm, 1993), particularly if an individual is seen as abusing his or her position within the group or violating the group ethos. This, according to Boehm, equates to the contradictory idea that leaders are "first among equals." These leveling mechanisms include criticism and ridicule, disobedience, poor public opinion,

and extreme sanctions, including removing an individual from the leadership position, assassination, and desertion. Thus, a reverse dominance hierarchy is said to exist because an egalitarian relation between followers and their leader occurs as a result of collectively assertive followers (Boehm, 1993). Rather than being dominated, the “rank and file itself manages to dominate,” (Boehm, 1993). Though having leaders (even informal ones) seems contradictory to egalitarian societies, it should be noted that most societies or groups who exhibit egalitarian behavior do not necessarily oppose leadership, so long as the benefits of a person’s leadership outweighs the costs; to ensure that having a leader does not become too costly, groups with egalitarian behavior utilize leveling mechanisms to ensure the leader does not gain too much power.

Applying this concept to virtual communities, community leaders should maintain an active though not dominant position within the virtual community, using his or her authority to engage members in dialogue, resolve conflict and settle disputes, and ensure the group’s goals and ethos are being upheld. At the point where an individual begins to dictate discussion direction, prevent others from contributing, or ridiculing ideas (among other possible negative actions), group members may engage leveling mechanisms such as disobedience (i.e. discussing a “banned” topic), ridicule and criticism of the leader’s ability to lead, his or her ideas, and so on, enacting sanctions against the individual (i.e. removing him or her from the group), or simply leaving the group for one that better fits what the group member is looking for.

While newer virtual communities may require more involved leadership initially, once the group has matured and membership is relatively stable, the need for leaders decreases, as members are comfortable with established group norms and continue to work towards accepted group norms. However, individuals such as subject matter experts, facilitators, and mentors can be found in a variety of communities, all of which are roles that increase prestige of the individuals with specific knowledge expertise. Many of these roles garner respect among community members for their knowledge of the topic of interest or familiarity with the group's history, methods of operating, and goals, which serve to increase trust and social capital of such members. Ultimately, while not leaders in the traditional sense of the word, such community members foster respect, trust, and social capital, all of which improve reputation and social standing within the group.

In virtual communities, leadership is often less clear and identifiable, though it must exist at some level if only to maintain websites or listserves. Though much of the literature on virtual community leadership focuses on business applications of this leadership in organizational communities of practice, some of the concepts may be applicable to virtual communities in general, particularly if a leader is clearly defined and has duties beyond site maintenance and the like. Much like hunters in egalitarian societies, some members of virtual communities emerge to accomplish certain tasks within a group. Such members could be thought of as leaders within a virtual community, though it will be argued they would not be leaders in the traditional sense of the word. Rather



than possessing formal leadership that is recognized by an institution, organization, or company, most virtual communities possess informal or collective leadership that emerges when necessary, and is comprised of members from the group.

Bell and Kozlowski (2002) detail the two primary functions of leaders in virtual communities. First, leaders are responsible for the development and shaping of team processes. Because virtual communities are often made up of many individuals, the functional role of a leader is to take these individuals and create a coherent and well-integrated group that is working towards the same goal. As new members join the group, leaders are key to socializing new members to group standards and norms, and helping integrate them into the society with minimal interruption to the rest of the group (Bell & Kozlowski, 2002). Additionally, leaders (both formal and informal, hands-on or hands-off) are responsible for the creation and promotion of group goals, shaping the perceptions of the group both within and outside the group, and establishing a method of operating for the group. The more that members can identify with the group, its goals, and its norms, the stronger the bond will be between participants, and the more they will be encouraged to help achieve group goals and fulfill the mission (Bell & Kozlowski, 2002).

The second function of leadership in virtual communities is to monitor and manage group performance and behavior. This function primarily is needed when and if a problem arises and the group cannot work it out itself. In this case, leaders are tasked with discovering the cause or nature of the issue and using

the information that was learned to devise and implement effective solutions, often with the aid of the group (Bell & Kozlowski, 2002).

While the aforementioned functions of virtual leaders are especially true in institutionalized virtual environments, these characteristics can also be seen to some degree in self-emerging or self-managing groups, which are able to fulfill these functions without a formal leader by providing clear direction with specific goals that the group should work towards. By enhancing self-regulation, groups effectively monitor themselves. This is often accomplished by establishing habitual routines, usually by the individual or individuals who created the forum, listserve, MUD, or other online community. Habitual routines can be developed by creating standard operating procedures and making them available to all members, training group members these desired routines, and providing incentives to ensure compliance (Bell & Kozlowski, 2002). Those who break routine or violate norms are often counseled by other group members first, and may be censured or removed from the group by one or several members if violations continue.

Not all groups require the same leadership style; Bourhis, Dubé, and Jacob (2005) indicate that the type of leadership that is needed by a group is determined by the group's "structuring characteristics," or stable elements that can be used to describe a virtual community if one took a photograph of the group at a point in time. Though some of the characteristics may evolve over time, many remain stable throughout the life of the community. Bourhis, Dubé, and Jacob (2005) have created a typology that identifies 21 structuring

characteristics that can be used to compare virtual communities. These 21 characteristics are divided into four main categories, including demographics, organizational context, membership, and technological environment.

Bourhis, Dubé, and Jacob (2005) also created a typology of community roles that focus on different aspects of leadership. This typology outlines the various positions members may take within a group, each of whom provide different functions and expertise to a group. The first type of role Bourhis, Dubé, and Jacob describe are referred to as knowledge domain roles (i.e. subject matter experts or core team members) that function as the keepers of the community's knowledge, maintain specialized knowledge of the topic, and aids in developing the community's mission, purpose, and goals. Next, Bourhis, Dubé, and Jacob describe leadership roles (i.e. community leaders or sponsors) that provide overall guidance and management, nurture members to contribute, and provide top-level recognition for the community. The third type of community role is referred to as the knowledge intermediary roles (i.e. facilitators, content coordinators, and journalists) that network and connect community members, facilitating discussions, providing knowledge and research, and capturing relevant knowledge produced by the group. The final group found in the typology consist of community support roles (i.e. mentors, admin/event coordinators, and technologists), that help new members navigate the community and learn its norms and practices, coordinate and organize community events or activities, and oversee and maintain the community's collaborative technology (Bourhis, Dubé, & Jacob, 2005).

Interestingly, leadership in virtual communities may also be relatively fluid and based on the subject at hand. In cases such as this, an individual may step up and lead discussions as long as they focus on his or area of expertise. When the subject changes, the individual normally steps down while a new expert may lead the new discussion. Peachey, Gillen, and Ferguson, (2008) indicate that such virtual environments often empower individuals who may not be leaders in everyday life to capitalize on their in-depth, pre-existing knowledge and understanding of the topic at hand, and subsequently demonstrate leadership for the duration of the topic being discussed.

Wolff, Pescosolido, and Druskat (2002) evaluate the importance of informal or emergent leaders within self-emerging groups. Informal leaders are individuals who are able to exert influence over other members of the group, are part of the group they influence, and are often chosen (informally) as a leader by other members; such leaders rarely are compensated or rewarded for their actions, and do not possess the ability to “hire and fire” individuals from the group. Though informal leaders hold no formal power, and group members are not required to listen to or follow informal leaders’ advice, such leaders are often socially perceptive and can easily recognize and understand the feelings, emotions, and desires of group members. This skill allows such an individual to accurately analyze a situation and prioritize the issues the group faces in order to address the most important first. By doing this, these individuals aid in-group maintenance and member support. If community members see this individual as caring for both the group and the members without requiring special access or

status increases, they are more likely to trust this individual and see him or her as beneficial to the group's success. This is possible, according to Wolff, Pescosolido, and Druskat (2002) due to the informal leader's emotional intelligence, or one's ability to accurately identify, appraise, and assimilate emotions in thought and regulate both positive and negative emotions in one and others. An individual who can effectively empathize with other group members is able to help group members solve problems and attain goals, which serve to further increase trust and solidarity between the informal leader and the group.

Informal leaders also play a key role in developing group efficacy, which Pescosolido (2001) describes as the group's collective estimate of its ability to perform a task or reach a goal. This concept has the ability to affect a group's mission and commitment to that mission and the group, to influence the manner in which group members work together, and helps determine whether the group will survive in the face of difficulties or scandal. What is notable about Pescosolido's (2001) study is that it was found that informal leadership influence was particularly strong at the beginning of the life of the group, when little information is available and people are looking for someone to take the initiative to begin the process of group-building, fact-finding, and goal-setting. Group members respond to an individual's initiative and positive attitude about the potential success of the group, thus allowing the informal leader to impact the decision-making and goal-setting processes of the group. Once more

information becomes available and the group has clearly defined goals in mind, the requirement for informal leadership diminishes over time.

However, this does not imply that informal leadership disappears altogether. As Friedrich, Vessey, Schuelke, Ruark, and Mumford (2009) indicate, while groups or networks may not require one individual leader who exerts control over the group and its processes, leadership instead may actually entail a collective element where it is experienced throughout the group. This way, the expertise, skills, and knowledge found within various individuals of the group are recognized when they are needed, serving to effectively distribute the elements of leadership as the situation or the problem at hand calls for it. Rather than a group possessing a defined set of leaders, it is “likely much more dynamic and occurs as the needs arise, much like a ‘whack-a-mole’ game in which the person with the most relevant skills and expertise ‘pops up’ at any given time,” (Friedrich et al., 2009).

### ***2.5 Virtual Communities, Trust, and Social Capital***

Although virtual communities have existed in some form for at least 30 years, little is known about what motivates people to use, participate in, and contribute to virtual communities. Knowledge exchange is often a key motivation for individuals to use emergent virtual communities and is influenced by prosocial attitudes and organizational norms (Ridings et al., 2002). More than members experiencing general attitudes of caring for others, trust and social capital are significant factors that predict whether or not an individual

contributes to the information exchange present in virtual communities (Ridings et al., 2002).

According to Abdul-Rahman and Hailes (2000), “trustworthiness, the capacity to commit oneself to fulfilling the legitimate expectations of others, is both the constitutive virtue of, and the key causal precondition for the existence of any society.” Furthermore, trust is an implicit set of beliefs that the other party will refrain from opportunistic behavior and will not take advantage of the situation or the other individual in question (Ridings et al., 2002). Because virtual communities are as real as communities that meet physically or whose members exist in near or convenient proximity, whatever role trust plays in physical communities is also at play in virtual communities as well since all virtual interactions are committed by humans (Abdul-Rahman & Hailes, 2000). Although almost all virtual communities have established norms and operating methods, these rules may not provide sufficient guarantees that all members will behave as they are supposed to; in this case, trust acts as a subjective substitute in order to facilitate information exchange and open sharing of personal information or knowledge (Ridings et al., 2002).

Though traditional and virtual communities are similar in this way, one must also note that those within a virtual community have less to work with, so to speak, when determining if an individual should be trusted. Because the traditional cues one would rely on to aid in determining if another individual was trustworthy, such as eye contact or tone of voice, one must therefore focus on other, less physical, factors. Because it may be beyond an individual’s ability

to evaluate all facets of a given situation when called upon to make a decision based on the trust of another actor, these individuals must rely on other sources of information, namely reputation or prestige. This is based on patterns of interaction, one's contributions to the online community, one's adherence to the group's norms and rules of conduct, and the opinions of others. It is important to keep in mind the following factors about trust in the virtual community: it is context-dependent, it is based on prior experiences, individuals are able to exchange reputational information through recommendations and other information searches, trust is not transitive (it must be earned), it is subjective, it is dynamic, and it most often concerns interpersonal trust (Abdul-Rahman & Hailes, 2000). Trust in virtual communities is best understood in the context of interpersonal relationships, or relationships between people (Ridings et al., 2002). Due to the collective nature of online communities and the potential great size of the online group, trust is extended at a collective level and is generalized for a large audience; trust then is developed between an individual and the community as a whole first (Ridings et al., 2002). Once trust is established and individuals within the group become more familiar with one another, it is not uncommon for them to move offline and include the telephone, personal instant messaging chat discussions, or actual meetings (Blanchard & Horan, 2000).

Densely knit online groups are apt to experience high levels of trust and subsequently be mutually supportive, with exchanges of help often forming a complex web of assistance among group members (Wellman, 1997). People who feel a strong attachment to the group and its members are more likely to



participate and assist others, even if they may be total strangers. Generalized reciprocity and group citizenship motivate people to assist others within these communities. Conversely, if not present, this lack of trust will weed out undesirable opportunistic behavior that could be committed by others (Ridings et al., 2002), which could theoretically be greater in online environments where there is little accountability for behavior outside those established by the groups.

Ridings, Gefen, and Arinze (2002) indicate that trust is multidimensional and consists of three distinct beliefs or factors, including ability, benevolence, and integrity. Ability is the skills or competencies that afford influence to an individual in a certain area; this is highly relevant to virtual communities because such groups are usually focused on a specific topic of mutual interest. An individual extremely knowledgeable in gardening in Midwestern climates would be afforded more trust by participants in the group than a novice, for instance. Benevolence is the expectation that other people within the group will have a shared desire to do good both for the individual and the group (Ridings et al., 2002). This concept is important to virtual communities, because without this positive reciprocation of knowledge, resources, and information, these groups would cease to exist. Virtual communities depend on continued dialogue and interactive participants, both of which depend on the benevolence of members. Integrity is the expectation that another member of the community will act properly according to the group norms, rules, and standards established by the group, which often include the expectation of honesty, not lying, and providing reasonably verified (or verifiable) information (Ridings et al., 2002).

Integrity is important to virtual communities because it is the existence of norms of reciprocity, closely linked with benevolence, which allows the community to function properly and not die due to the inability to trust the knowledge shared or generated by the community members. Interestingly, Ridings, Gefen, and Arinze (2002) equate integrity and benevolence in the virtual community, namely because they both lead to the same behavior of reciprocity of information. The desire to perform helpful acts through reciprocity in the community is both benevolent behavior and adhering to the norms or standards established by the group, or integrity (Ridings et al., 2002).

In addition to trust, Chiu, Hsu, and Wang (2006) look to the Social Capital Theory which suggests that social capital, or “the network of relationships possessed by an individual or a social network and the set of resources embedded within it,” exert a strong influence over how much and what interpersonal knowledge is shared with a network. Another way to define social capital includes “the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit,” (Chiu, Hus, & Wang, 2006). Networks, norms, and trust are interrelated and essential parts of the theory of social capital (Blanchard & Horan, 2000). Social trust is born of norms of reciprocity and networks of civic engagement, both of which contribute to the idea that pro-social behavior will be reciprocated at a later point in time (Blanchard & Horan, 2000). Though close social interactions, individuals can increase the depth, breadth, and efficiency of mutual knowledge exchange (Chiu, Hus, & Wang,

2006). Social capital is seen as possessing three distinct dimensions: structural (manifested as social interaction ties), relational (manifested as trust, norm of reciprocity and identification), and cognitive (manifested as shared vision and shared language) (Chiu, Hus, & Wang, 2006).

It must be noted that virtual communities differ from traditional organizations and communities; for example, no such concrete reward systems exists for online communities to reinforce the mechanisms of mutual trust, interaction, and reciprocity among individuals (Chiu, Hus, & Wang, 2006). While it has been suggested that some individuals share knowledge within virtual communities with the expected outcome of enriching knowledge, seeking support and making friends/connections, researchers have suggested that the primary reason that individuals share their knowledge is their expectation as being seen as skilled, knowledgeable, or respected (Chiu, Hus, & Wang, 2006). When sharing with the community, individual's expected outcomes include being seen as a knowledgeable member of the community, which commands attention, respect, and reciprocity. Reciprocity is one of the factors that encourages information sharing and implies that it will continue as long as participation continues, and will cease when expected reactions are not forthcoming (Chiu, Hus, & Wang, 2006).

Blanchard and Horan (2000) examine the influence of networks, norms, and trust on social capital. Networks, or specific types of relations that link defined sets of people, objects, or events, focus on a person's participation in groups organized around certain topics, the exchange of information or social

support within these groups is a major contributor to social capital. Networks in virtual communities affect social capital through expanded social networks and the facilitation of the dispersal of information about or created by an individual.

Norms of behavior exist within virtual communities as well; general norms of polite behavior in online communities are usually governed by netiquette, which includes norms of reciprocity. In virtual communities, information is the primary “act” of help that is exchanged between participants, and it is assumed that others will reciprocate in the future. Those who help tend to gain social capital and status among members, particularly when they are seen as an expert or as continually dispensing valuable or useful advice. Interestingly, because such forums as chat rooms and bulletin boards are public and available for most to see, acts of information exchange are visible to all and it is easy to see when someone helps another individual (Blanchard & Horan, 2000).

Because altruism alone cannot sustain the millions of discussions found on the Internet, building a reputation and establishing one’s online identity as knowledgeable and worthy of time and notice proves to be a great motivator (Donath, 1999). Many people spend a lot of time and energy answering questions, mediating arguments, maintaining FAQ sections, and so on, for no apparent gain. However, as a result of such behaviors, they do benefit in that their name becomes well known to the participants of the group, other writers may defer to their opinions, or recommend that their ideas be sought in an argument (Donath, 1999). Reputation is enhanced by posting intelligent and

interesting comments (for the most part). Though rules of conduct vary for each group, the ultimate effect is the same in that one's reputation is enhanced through a steady contribution of comments or remarks that the group admires (Donath, 1999). Being viewed as an expert by consistently providing and exchanging credible information helps an individual earn more prestige amongst members of the group. This, in turn, improves one's status within the community.

## ***2.6 Identity Formation***

Understanding communities is key to understanding identity as well. Communities ultimately influence identity and are in turn influenced by the individuals of which they are comprised. One's identity can only be understood and gains meaning only in the context of a community. The social identity approach states that the "social" is not external to the self but is instead internalized through a social identity. Social identities are both individual perceptions of the self as well as socially shared and socially constructed notions of the defining features and boundaries of a group (Postmes, Haslam & Swaab, 2005). Postmes, Haslam and Swaab (2005), argue that "this definition implies that although social identities are represented in individual cognition, they are simultaneously properties of the social group itself because they depend on some degree of consensus among those who subscribe to this identity." For members of a given group, the social identity construct provides members with a common "interpretive framework that defines the group in relation to other

groups and is embedded in a common perspective of group history and/or a shared sense of future direction,” (Postmes, Haslam & Swaab, 2005). Identity not only helps to define and find a place for oneself within a social structure or group, but it encourages participants to engage in collective action in order to change an assumed social reality.

According to the social categorization theory, social identity may potentially exert a social influence on an individual’s thought and action through two processes: namely, social categorization and social identification. In order to categorize oneself as a member of a specific social group, the categories that are salient to the group must also be salient to the individual (Postmes, Haslam & Swaab, 2005). If technology is not an integral part of an individual’s life, then joining a community that focuses on emerging technology will most likely not find relevance to the individual. Once an individual identifies with a social structure or group, this identification is more than knowing that he or she is part of the group; rather, this identification affects behavior of the individual. Both categorization and identification increase the probability that individuals will define themselves in terms of a particular social identity as it relates to the group. Once this happens, then the norms, stereotypes, and other properties that are common to the group are internalized and become interchangeable with the individual’s norms and stereotypes, effectively influencing thought and guiding actions (Postmes, Haslam & Swaab, 2005). The exact nature of the influence the social group exerts ultimately depends on the content of the identity through specific norms, conventions, ideology, stereotypes, or culture, all of which is fluid

and not fixed. It must be noted that although groups influence individual identity, individual identities also influence the group. If the social identity is salient, then group members will be influenced to behave in a way that is consistent with the content of this identity and with previously established group norms.

Because identities are relatively flexible and fluid, this has helped individuals adjust to the rapidly developing challenges of modern life. Individuals now have the opportunity to be influenced by and influence more groups than ever before. Most traditional identity theories concern individuals and small groups; modern technology and virtual communities introduce new influences to identity formation. Furthermore, technology has influenced identity formation through increased opportunities for communicating with a variety of communities and providing individuals with another outlet for voicing one's narrative, allowing community members to influence, interpret, and ultimately incorporate the individual narrative into the group's narrative.

This concept is important to understanding the influence that individual's have on a group and alternatively how a group influences an individual's identity. Unfortunately, Postmes, Haslam, and Swaab (2005) do not specifically account for computer-mediated communication and virtual community group behavior. However, given that virtual communities function as traditional communities, this theory should remain applicable for groups found online. This will be critical when evaluating individual and group communications in the

selected virtual communities as a way to gauge the impact virtual communities have on identity expression and individual and group narratives.

The previous literature has provided the underlying building blocks for evaluating virtual communities as egalitarian societies as well as understanding what benefits community members derive from participating in virtual communities. After determining that virtual communities should in fact be considered as much a community as one that meets face-to-face and that they theoretically share many characteristics with egalitarian societies, including weak leadership, prosocial behaviors, free access to resources, the ability to join and leave groups as one desires, for example, the following sections provide the data to evaluate the proposed research questions: 1) How do virtual communities function as egalitarian societies; and 2) What benefits do members receive from participating in virtual communities?

The following analysis synthesizes previous research conducted on traditional egalitarian societies and applies it to a relatively untouched area of study in the social sciences – self-emerging virtual communities. By evaluating two virtual communities, classifying all posts in each community, and analyzing emerging themes, this study contributes new knowledge of social structure of virtual communities to the field of Anthropology, extends traditional notions of egalitarianism as it applies to virtual communities, and highlights major benefits members of virtual communities receive from participating in and belonging to such a group.



### **Chapter 3 - Research Setting and Methodology**

Despite the unique setting, virtual communities provide a rich environment for studying and evaluating groups of individuals that essentially form egalitarian societies. Rather than observing behavior or recording vocal conversations, researchers can capitalize on the textual-based virtual communities and enjoy direct access to group contributions, conversations, and operating instructions. In order to assess and interpret virtual communities as cultural systems, one must devote attention to the rules, norms, conversations, and questions that continually arise in virtual communities as they represent efforts to reach out to other group members and communicate some type of information or need. By evaluating communication patterns of social interaction amongst group members, it is possible to develop an understanding of how the group functions, the roles it fulfills for members, and examine why individuals continue to contribute time, energy, and information despite the lack of apparent tangible benefits.

The primary goal of this qualitative research project is to highlight the common patterns of communication and interactions within two virtual communities and understand what meaning members of user-generated forums produce. Due to the ever-changing nature of topics in the virtual communities selected for evaluation, evaluation methods that allowed for flexibility proved most fitting. In order to achieve the research goal, methodological procedures such as netnography and content analysis are used to acquire insight from posts

made to the virtual communities that are studied. This combination of methodologies proved most useful when accounting for the unique research setting and most helpful when analyzing the content posted by the groups to acquire comprehension about two virtual communities and their underlying operating structures.

### ***3.1 Message Boards***

Data was gathered through user-generated message boards hosted by the Google Groups platform. Several criteria were utilized when selecting the message boards that would be used for analysis for this research project . First, a moderate- to high-level volume of posts was necessary to provide enough data to accurately analyze recurring themes and emerging group communication and contribution processes. Next, although discussions focused on certain topics, such as rats, a wide variety of messages and subtopics were required to provide richness of analysis and depth of discussions. Additionally, it was preferred that the research group members be familiar with both the other members and the group itself in order to best observe group dynamics already in place. Additionally, it was imperative to study message boards that did not require registration to view content or have explicit rules prohibiting researchers from the forum.

For this study, two message boards were selected for further investigation. Due to the open nature of the content on the message boards and the manner in which the message boards are designed, readers of posts are able

to view the poster's personal name and email address in addition to the time and date that a comment was posted. As a result of this, specific titles of message boards will not be mentioned in an effort to safeguard the privacy of the forum's users. Rather, they will be defined by the broad topic on which they focus; in this case, "Rats" and "Aquariums." Each message board is hosted by the Google Group platform. Each forum is customizable to reflect one's color and graphical preferences, and allows members to communicate via the message board or email. It is necessary to describe the look and functionality of the message boards to better facilitate an understanding of how conversations are structured and members interact and navigate the environment to produce meaningful conversations.

### **3.1.1 Rats Message Board**

The "rats" group is a message board group dedicated to people who love pet rats. This virtual community is a social-networking extension of the group's main website. Founded in 2004, the goal of the club is to promote the well being of rats through education, rescue, and adoption. The organizational website is used to spread information and provide educational material for rat owners and suppliers alike. With information such as general rat ownership guides, veterinarian recommendations, and helpful information to provide to the veterinarian during a visit available online, the group serves not only the local area in which it was formed, but also members throughout the world.

The message board, hosted by the Google Groups platform, provides the active component to the group's communication efforts. Created in September of 2008, this virtual community currently has 133 active members. Although breeder posts (commercial posts by rat breeders meant to generate business) are strictly prohibited and an individual must be a member to post to the group, the group forum is publically available for anyone to view (membership not required) and all messages are accessible without membership. Since its inception, the group has posted more than 9000 messages, with August 2009 being the most prolific with 678 messages. In accordance with the general decline in frequency of posts, May 2011 showed the fewest with 90 posts. The group is described as a casual and friendly atmosphere where anyone is welcome to join. Additionally, new members' posts are moderated and monitored for a period of time from the site administrators to ensure that people are not trolling or spamming the group. Though one coherent list of rules does not exist for the group, several moderator announcements indicate that there are a few rules in place; first, the message board was made public in an effort to provide advice and education to any rat enthusiast cruising the Internet. As such, members must be sure to refrain from posting private information if they do not want anyone to be able to access it through the group. Next, group moderators must approve membership for anyone who requests it. Additionally, group rules prohibit spamming or inappropriate behavior or posts ("ie: non g-rated postings, bashing, flaming, etc."). Only members can post, and individuals under the age of 18 are asked to obtain their parents permission to join the discussion board.

Finally, the administrator indicates that input, stories, and questions are all welcome on the site. While this is not an extremely detailed set of rules, it serves to highlight the trust the moderators have for the group members to keep posts positive and helpful and do not need to (at this point in time) provide a heavy-handed list of rules meant to contain behavior and potentially restrict posts.

The “rats” forum consists of bright yellow banners along the top and sides of the website. The largest banner on the top hosts the title of the group’s name, a computer-generated picture of a rat wearing a crown sitting on a block of cheese, and a search function that allows users to “search this group” or “search Google.” The home page is announced by a small yellow banner with the word “Home” inside it that sits on top of notes the group would like to make available to all visitors to the site. In this case, a note (in red text) announces that zipped versions of the pages and files associated with the group will be available for download until August 31, 2011 and that after that date, the feature and the zip file downloads will be turned off permanently. This is followed by two links to download the pages and the files as zip files. Under this note is another yellow banner with the word “discussions” in it and indicates the number of posts that can be seen on the home page out of the number of total posts posted on the site. It also lists the seven most recent discussions the forum has posted. In this section, one is able to view the title of the thread, see the name of the individual who posted the thread, the date it was posted, the number of authors who have commented on the thread, and the number of replies to the original post. One may click on the thread (which functions as a link) to view the whole thread

(including others' posts). The threads themselves are unstructured in that the main list of threads is not visibly hierarchical. Each linked thread contains the additional posts and viewers do not see them without selecting the thread for further viewing. This format is a relatively simple format for discussion boards and facilitates navigation on the forum.

The right side of the site showcases the main contents of the websites in two tabs – one that directs users to the home page, and one that directs users to the discussion page. Though the home page also displays the discussion topics, it is possible to go directly to the topic page. Additionally, the right side provides links to additional information about the group and the ability to apply for membership to the group. Although anyone is capable of viewing the content of the website, only members are able to post. In line with Google's advertising efforts, the right side is also host to ads relating to both the researcher's geographic location and pets. In this case, one ad entitled "Omaha Pet Spay," encourages readers to "call our clinic today for spay and neuter services for your pet," and provides a link to the website. Two similar ads are featured underneath as well. Finally, the right side also hosts some quick information about the group, namely the number of members, the language in which the forum is hosted, the group categories the forum falls under, and a link to more group information. See Figure 2 for an image of the rats message board. Identifying information has been removed to secure privacy for members.

All Google Groups must identify themselves with subject-related categorical tags, such as "science and technology," "arts and entertainment,"

“health,” and more. The “rats” group applies the “science and technology,” the “society,” and “recreation” identifiers to its name. This group adds the more specific identifiers of “biology,” “activism,” and “animals.”

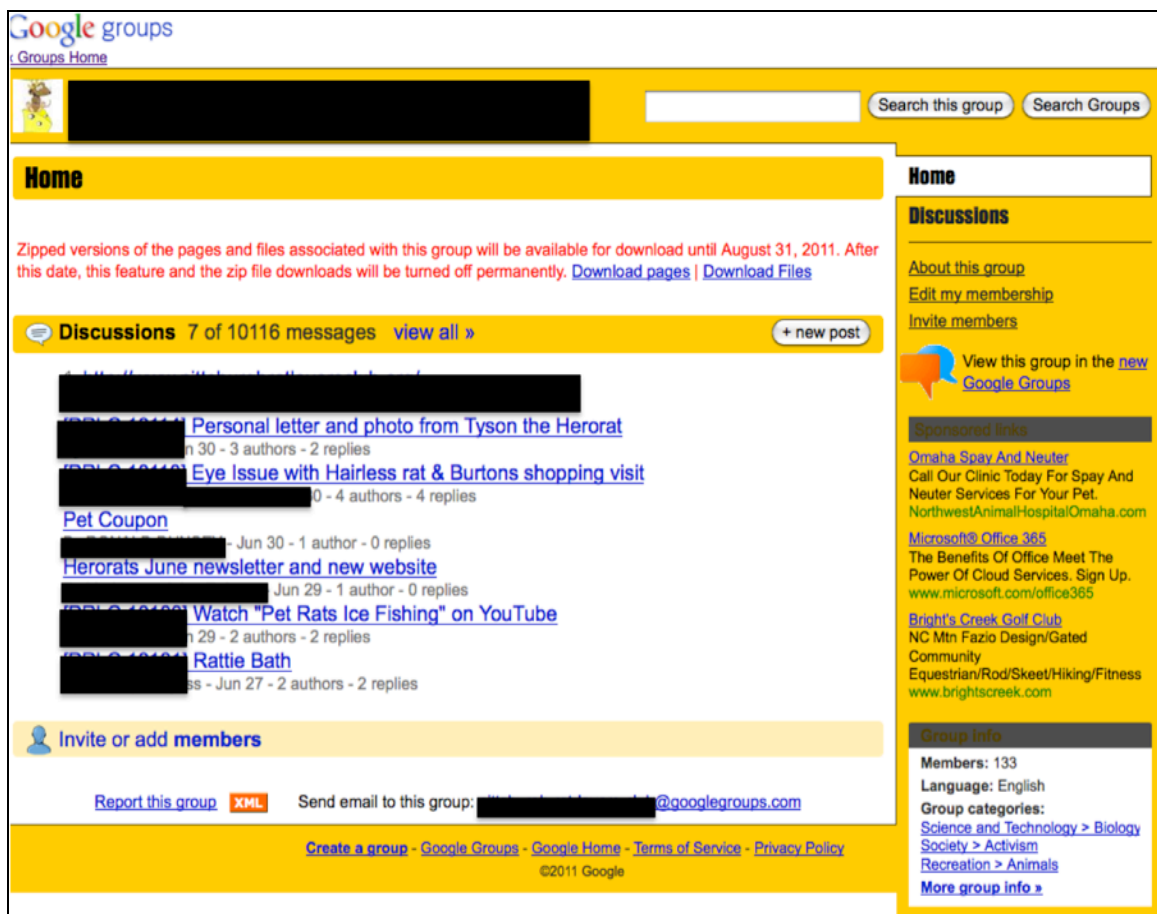


Figure 2: Image of the "Rats" Message Board

### 3.1.2 Aquarium Message Board

The “aquarium” group is a message board group dedicated to individuals who are devoted to the promotion of and care for home freshwater aquariums. The message board, also hosted by the Google Groups platform, was created in December 2004. This virtual community currently has 1242 active members.

This group is dedicated to discussing all aspects of freshwater fish keeping, tropical fish, aquatic plants, and their care. Additional topics such as fish tank setups, pond design, filters and heaters, gravel, lighting, and anything that applies to aquariums or ponds are all acceptable topics of discussion. As its rules indicate, this group is a noncommercial group and does not allow anyone to post full-message advertisements, though it is acceptable for regular members to include their business information in a two-line signature at the end of their posts. However, members are warned about posting business information too often, as it can be seen more disruptive than helpful. Like the rats forum, this group is a managed group meant to ensure that posters stay on topic. This group forum is also publicly available and accessible without membership, but only members can post comments. Since its inception, the group has posted more than 45,000 messages. This group also has suffered from a general decline in frequency in posts, with February 2007 exhibiting the greatest number of posts with 2,347 and with May 2011 showed the fewest with 24. Like the rats forum, the aquarium group must tag itself with relevant categorical identifiers; the aquarium message board applies the “home,” and “recreation,” identifiers. This group also adds more specific identifiers of “gardens,” “pets,” and “animals.”

Unlike the rats message board, the aquarium group lays out specific rules of engagement for members to abide by during discussions. Seven specific rules are highlighted in a post entitled “Group Rules.” First, the management teams asks that individuals subscribing via email not simply hit “reply to” when responding to another member’s post; this is done to clarify posts and remove



irrelevant and repeated information. The second rule concerns threads; while it is normal for conversations to develop throughout the life of a thread, the management team asks that a new thread be started in order to gain the attention from the appropriate experts. For example, if a thread originally concerning lighting in freshwater tanks develops a conversation concerning breeding fish, members are asked to start a new thread on breeding fish. The third rule concerns handling disagreements within the group; members are asked to respect the opinions of others and consider taking the debate to private email if necessary or if requested by other members in the group. The fourth rule asks members to observe a “frequently asked question” page for useful information regarding aquariums. The fifth rule asks members to feel free to make suggestions for improving the group in an effort to continue to make the group a thriving and informative community and resources. The sixth rule asks that members not post full-message advertisements since it is a noncommercial group. While regular participants are free to post business information in a two-line signature, the management team would prefer to reduce business advertisements as they can be seen as counterproductive in hobby groups. The seventh rule indicates that photographs are welcome on the forum. Parameters for photograph sizes are given, as well as offers of help if a member has troubles. The final note on the “Group Rules” page indicates that this group is a managed group; the management team’s purpose is to ensure that discussions stay on topic and remove and/or suspend individuals who deliberately attempt to disrupt group processes. While users can issue a complaint about an individual

who may be violating group rules, the management team will decide about banning and/or suspending users. Finally, users are appealed to use their common sense; aside from the seven rules, the site is open to a wide variety of topics and discussions and its overall goal is to provide a useful and education resource for those interested in freshwater aquariums.

This group page is nearly identical in layout to the rats forum group page described above. There are a small number of cosmetic differences; first, the yellow in the banners is a softer yellow color. Next, the largest banner at the top of the page hosts the title of the group's name in green font along side a picture of a waterfall. Other than those changes and the topics contained within, the design of the website is the same as the rats website. See Figure 3 for an image of the aquarium message board. Identifying information has been removed to secure privacy for members.

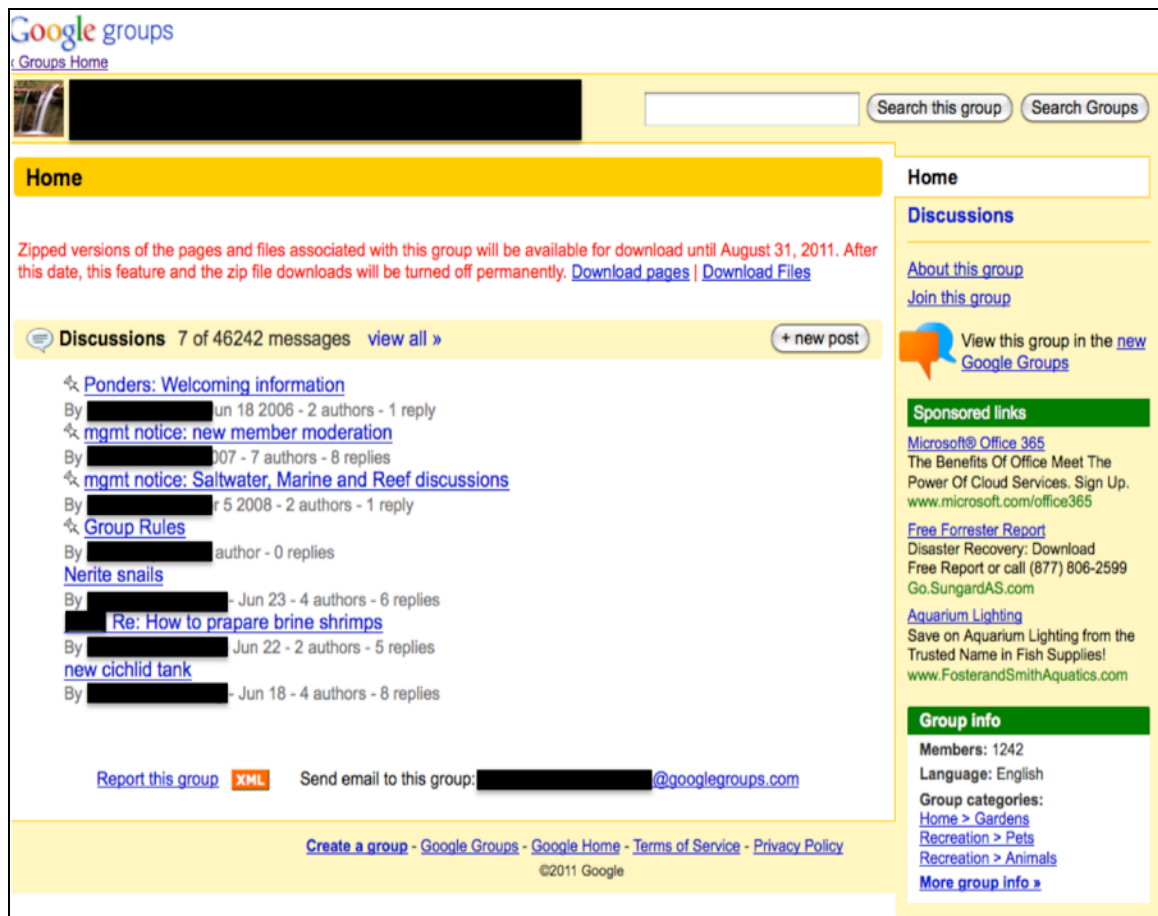


Figure 3: Image of "Aquarium" Message Board

### 3.2 Data Collection

In order to gain a comprehensive understanding of the virtual communities described above, it was clear that using a netnographic methodological procedure would provide the best platform from which to analyze the emergent data. Capitalizing on relevant components from a variety of approaches in one methodological process allowed for an extensive and intensive content analysis of emerging themes, data, and communication patterns.

### 3.2.1 Netnography

Because this research was conducted in a virtual community, it is vital to understand what makes this environment differ from traditional ethnographic studies conducted in social sciences and adapt the methodology for data collection to this unique environment. Netnography is a branch of ethnography that focuses on the analysis of human behavior in virtual settings. Though Kozinets (2010) indicates that netnography was originally devised to improve market research, it can be used to address “applied questions of online advertising to more general investigations of identity, social relations, learning, and creativity.” However, with few exceptions, anthropologists on whole have been relatively slow and reluctant to use virtual social groups to conduct ethnographic studies. Due to the pervasiveness of technology, we have reached “the point of no return,” and social scientists are gradually understanding that they can no longer comprehend many of the most important facets of social and cultural life without incorporating the Internet and computer-mediated communications into their studies (Kozinets, 2010).

Due to the fact that the online social experience varies significantly from face-to-face social experiences, it follows that the experience entailed in studying the interactions will be different as well. The netnographic approach highlights three main differences in the approach needed when researching virtual communities. First, entering a virtual community is distinct; compared to face-to-face entrée into a group, accessibility, approach, and the span of potential inclusion are made relatively easier by the tendency towards inclusiveness in

virtual communities and the relative anonymity afforded to individuals (Kozinets, 2010). Second, gathering cultural data and analyzing it has particular challenges as well as opportunities that are new – the amounts of data can be different, the concept of field notes will be treated differently, and the application of particular analytic tools and techniques changes when the data are already digitized (Kozinets, 2010). Third, there are few, if any, ethical procedures for face-to-face fieldwork that is easily translatable to the virtual medium. The guidelines are abstract at best and are open to wide degrees of interpretation (Kozinets, 2010). Kozinets (2010), an expert in the field of netnography, states that “there are very few, if any, specific, procedural guidelines to take a researcher through the steps necessary to conduct an ethnography of an online community or culture and to present their work.”

To address this issue, Kozinets (2010) provides a methodological primer for a cultural approach to online research. While this methodological approach is new in its focus and application, it is derived a synthesis of existing methods, theories, approaches, and ideas to put them together in such a way that will be aid a researcher of virtual communities. Due to its flexibility and open-ended approach, ethnography has remained a popular method for social scientists throughout the years to represent and understand the behaviors of people belonging to drastically different populations. Because it inherently assimilates other methods, ethnography is based on adaptation or “bricolage,” meaning that it is continually be refashioned to suit particular fields of study, research questions that need to be answered, research sites to be explored, times,

preferences of researchers, skill sets, methodological innovations, and cultural groups as they develop and change (Kozinets, 2010).

Netnography, then, is participant-observational research based in online fieldwork and utilizes computer-mediated communications as a data source to determine the ethnographic understanding and representation of a given culture (Kozinets, 2010). This methodology can include other elements such as interviews, descriptive statistics, archival data collection, extended case study, and so on (Kozinets, 2010). Furthermore, netnography shares similarities with grounded theory in that throughout the data collection process, the data must be constantly analyzed and interpreted, thus allowing the researcher the freedom to determine which posts are relevant and how they fit into developing categories. The emerging data, then, fall into categories that permit a researcher to continually shape the data collection process.

Though privacy concerns prevent participating in the virtual communities selected for analysis for this particular research project, selecting topics about which one is familiar aids researchers in picking up embedded cultural understanding and analyzing the cultural context correctly. The study of communication patterns and content between and within members of a virtual community represents one type of netnographic analysis. Furthermore, identities online are typically unknown to the researcher due to the anonymous nature of the Internet; therefore it is essential to keep in mind that a netnographic study does not represent a complete set of observable acts since researchers are privy only to what individual's post online, but rather the

communication process and meaning creation that occurs as members communicate through a virtual community. Rather, similar to content analysis studies, key threads and posts are highlighted as a sample of communication patterns that emerge from the data.

### **3.2.2 Coding and Analysis**

Data were collected over the course of a three-month period from April 1, 2011 to June 30, 2011. To begin the analysis process, each post was read in both virtual communities. Because the monthly total of messages was a manageable 455 posts (as part of 116 threads), each post is used in the analysis. Reading and analyzing each message line-by-line allowed for key themes, goals, and communicative processes to emerge. In systematically reading through the data and cataloging key words and themes that emerged from the content, the authors of the posts and the frequency of the authors' posts were taken into account as well.

In order to safeguard privacy, participants are assigned a number rather than being identified by their email address or screen name. Numbers were assigned based on order of appearance in posts throughout the months of April, May, and June 2011. For example, the first individual to post a message was assigned the number "R1" to indicate that he or she was the first individual to post in the rats forum. Similarly, the first person to post in the aquarium forum was assigned the number "A1."

Once key themes were identified, every post was revisited to catalogue them with key identifiers and group together to ensure that each post corresponded with an overarching thematic category, which clarifies emergent themes and patterns that occur. Utilizing a netnographic approach allows for the openness to pursue emergent themes and refine categories as needed.

To better identify emerging themes, a coding scheme was developed and utilized to further identify themes and details of the messages posted to the message boards and also provide a framework from which to examine and evaluate the evolving data. Burnett's (2000) categorization of virtual behaviors was initially utilized to identify actions of the groups as either hostile or collaborative. Interestingly, all actions of both groups during the data collection period can easily be deemed as collaborative. As a result, data were further separated into either "social" or "informational" categories. Though Burnett's (2000) categorization of virtual behaviors was initially utilized to identify actions of the groups as either hostile or collaborative, due to the lack of an applicable classification system built to explain virtual community actions, a narrower ad-hoc was developed for this research to better identify key themes. More specifically, each post was identified with one of nine social or informational labels to aid in the proper analysis of each post's theme. The social labels include "personal story," "activism," "emotional support," and "jokes." The informational labels include "information," "advice," "seeking advice/posing questions," "forum activities." Finally, there was an "other" label for posts that did not fit within those labels previously mentioned.



Though it is possible that several of the classification labels could apply to a single post, in order to accurately account for each post, it was necessary to limit the number of classificatory labels to one per post. Labels were assigned based on the predominant theme of the post while using the chain of responses as the guide to categorize related messages. For example, if one thread began with a post requesting information, it was assigned the “seeking advice/posing questions” label since the goal of the post is to find an answer to a question. Additionally, if a post replied to the question that was posed, it was assigned the “advice” label. Though the response may have included a personal story in his or her reply, the underlying reason for his or her response was to provide the advice to the original poster. This method provided the most efficient manner for labeling each of the 455 posts that were collected, and allowed for key themes to clearly emerge throughout the data analysis process.

A brief description for each label follows:

*Personal Story* – a member offers a personal story about a past or current experience that is not necessarily meant to provide information or advice. For example, R11 of the Rats Forum provided a personal story when he/she shared the story of how he/she came to be the owner of a particular rat, the rat’s journey through life, and ultimately his recent death. The poster was not seeking information or advice, but rather wanted to share his/her recent loss with a group of individuals who would understand the situation.

*Activism* – a member provides information about a cause that requires or requests action on behalf of the forum topic. For example, R3 of the Rats Forum

sent a post to the group, specifically targeting R5, regarding a local senior center that was trapping and killing rats. The goal of the post was to encourage members to contact the senior center to encourage them to use humane trap and release tactics when dealing with the rats. R5 additionally promised to visit the location to further aid the cause.

*Emotional Support* – a member offers emotional support to another member, typically in response to a personal story. This support is often offered as words of consolation or encouragement. For example, R3 of the Rats Forum shared with the group that one of his/her rats passed away the night before. In response to this personal story, 10 individuals offered condolences to R3 for his/her loss. A typical response resembles this response from R5: “God bless you for loving your rats...I’m so sorry to hear about him passing. They go too fast. I’m thinking of you.”

*Jokes* – a member offers a light-hearted comment meant to entertain other members. For example, R3 of the Rats Forum posted a new article that describes how some air travelers had found rodent droppings in the cabin. In response, R5 joked “so what’s a little extra raisin in the food now and then?”

*Information* – subject matter about the forum topic is provided in a post for members to view. It is not posted necessarily in response to a request for advice, but is offered for the edification of members nonetheless. For example, an article was posted in the Rats Forum that provided information about a woman who has established a widespread adoption network for rats. The article was posted for no other purpose than information dissemination.

*Seeking Information/Posing Questions* – a member poses a question about the forum topic or requests information on a given topic. For example, A18 of the Aquarium Forum posed a question to the group at large concerning the health of some plants he/she placed within his/her tank; “Anyone else with Golden Plecs have their broad leaf plants attacked?”

*Advice* – a member offers information or a solution to a problem posed by another member based on past experience or expertise. For example, A7 of the Aquarium Forum answered A18’s question posed above; “...if you’re talking about albino ancistrus, yes they will nibble on plants if they run out of algae film and you don’t provide enough other interesting things to eat. You need to provide the plecs with algae wafers, cucumber slices, zucchini, or other things they deem more tasty than plants.”

*Forum Activities* – a member posts information about the forum, including posts pertaining to rules of the group, email functions of the group, and so on. The goal is to convey information about the forum itself rather than the topic upon which the topic focuses. For example, A21 posted a question to the group asking if a FS [fish seller] listing was acceptable according to forum rules; in response, A5 restated one of the rules that seller posts were not accepted, and as a result, the post was removed. However, A7 indicated that A21’s post was acceptable in that the group does not “mind a single non-commercial post selling stuff another hobbyist might want.”

The classification schema outlined above ultimately provides a tool that allows virtual community interactions to effectively analyze community social

issues and parsing the underlying social structure of a group. Results of the coding and analysis will be seen in the following findings section. The analysis of the messages posted to two message boards clearly showcases the egalitarian nature of virtual communities. As will be seen in the following section, the virtual communities that were selected showcase egalitarian characteristics such as weak hierarchical structures, sharing of information, advice, and emotional support, reciprocity, and prosocial behaviors from members of groups. Additionally, the benefits of participating in virtual communities, such as identity expression, expertise, and uncovering the goals of posts, are discussed in the findings section.

Members enjoy these benefits because of the social structure of the virtual communities; since community members are able to participate in groups concerning shared passions without the conventional indicators used to judge people in everyday life, members are more likely to share information, pose questions and seek advice and emotional support, and encourage activism from themselves and others. Prosocial behaviors like these work to encourage more participation and provide individuals a platform to develop their identities and expertise as well. As individuals continue to share information, they continue to develop not only a sense of self, but a stronger sense of community as well in that all may benefit from the experiences and expertise an individual chooses to share with group members or the Internet at large. The following section provides the discussion for these concepts.

## Chapter 4 - Findings

Both the rats and the aquarium forums provide an excellent context with which to evaluate virtual communities and the communication patterns that emerges. By forming a network dedicated to socializing about specific topics of interest, group members are provided with an environment that offers them the opportunity to establish and express their identity, capitalize on and express their expertise in specific subject matters, offer advice, endow with information and emotional or social support, and present a platform for activism. By creating a place where individuals can visit to discuss topics they hold dear (such as pets or hobbies), these virtual communities ultimately function as egalitarian societies where regardless of inputs, individuals can walk away with new information, support, or ideas for supporting a cause. Although the majority of a group's membership or audience remains anonymous and lurks in the background, active members are aware of this discrepancy and continue to contribute to the conversation in spite of this. The Rats Forum and the Aquarium Forum message boards represent an ideal community with historical records to analyze communication between group members who share a strong common interest and work toward the same goals of information sharing, emotional support (when necessary), answering questions, and sharing personal information about themselves. More than supporting known members of the group, members willingly provide information and advice and personal stories to the Internet at large, since both groups are open to public viewing and aside

from withholding that information that they do not wish to share, few restrictions are put in place for either group. These forums provide users with an opportunity to express who they are, what they know, and to help others.

#### ***4.1 Egalitarianism***

To address the first research question, which asks how virtual communities function as egalitarian societies, this section will focus on the egalitarian nature of virtual communities. In general, it is clear that both the Rats Forum and Aquarium Forum function essentially as egalitarian communities would. Like traditional egalitarian societies, the virtual communities researched for this study exhibit a weak hierarchical structure, promote sharing, foster equality of status, provide free access to resources, enable freedom to join and leave the group at one's preference, and encourage participation, reciprocity, and prosocial behaviors from members.

##### **4.1.Weak Hierarchical Structure and Foster Equality of Status**

Reading the posts from each forum, it is clear that these communities exhibit the most moderate and weak form of hierarchy in human social organization, and there is little to no formal leadership present. While the aquarium forum does have a known management team, neither room exhibited any negative behaviors that warranted the exercising of posted rules, sanctions, or expulsion from the group. The following exchange is perhaps the closest event

that could be considered an exercise of formal leadership by a management team member in the aquarium group.

A new member, A8, posted the following introductory message:  
 I am new to the group. I write articles about Aquarium and  
 Fish care and thought this might be a good group to join!

In response to this post, member A4, who is also a member of the management team, posts the following reply:

Greetings, a wealth of info here. I'd send you to our FAQ to  
 review the non-commercial aspect of this group, but Google  
 has snatched the page away :(

A4 takes the opportunity to both express a frustration he/she has with the Google platform removing posts without the group's consent as well as subtly remind the new member that commercial posts are not allowed on the forum. Though member A8 does not respond to this message, another management team member, A6, responds to both messages. First, he/she responds to his/her management team counterpart:

It's in the sticky thread at the top called "Group Rules"

Here A6 is attempting to refer users to the Group Rules that have been posted to the home page of the forum. Next, A6 responds to the new user:

Welcome aboard, [A8].

It is clear that even though A4 is concerned that the new member will use the forum for commercial purposes, A6 is satisfied with welcoming him/her as a new member once he/she has been directed to the group rules, which directly bans commercial posts/use of the forum.

In both forums, members are free to introduce new topics in accordance with the rules established by each group, respond to topics of their choice, or lurk in the background. Even in the aquarium forum's more structured environment, there are no attempts to block users from posting questions or answers. Furthermore, all members have an equal voice to participate, or at the very least an equal opportunity to participate. If a non-member would like to participate, then he/she would just need to ask to join the group. No tests are required and no monetary donation is needed in order to join. Given the ease of access, the lack of formal leadership, the ability of members to act as they like (given a set of group norms and/or rules), and the lack of distinctions of power and status amongst members, these forums serve as prime examples that a relatively flat hierarchy exists within such groups.

Additionally, it is clear in the rats forum that it takes fostering equality of status amongst members seriously when it does not publicly list the members of the management team; in doing this, it equalizes all members across the board so the title of "forum manager" does not unduly influence others' behaviors or prevent them from posting as they normally would. While the aquarium forum does explicitly state the names of the management team, they also make it known that they are open to suggestions for site improvement, comments about members who violate the rules, and requests to join the management team, thus attempting to equalize statuses across the board:

Please feel free to make suggestions for improving this group. It's easiest for us to locate and respond to your ideas if you put them in a new topic. You are also welcome to



email any of us directly. We welcome your suggestions and comments to make this a thriving and informative community and resource.

Finally, this group is a Managed Group. The purpose of the Managers is to ensure that most of the discussion in the group is about aquariums and ponds. Subscribers who try to deliberately disrupt the on-topic discussion of aquaria and ponds will be suspended from posting or banned, either with or without warning - hopefully it will not come to this. Decisions about banning/suspending users will be discussed and acted on by the Management Team. If you wish to be considered for inclusion in the Management Team please email one of the managers of the group.

#### **4.1.2 Prosocial Behaviors: Promote Sharing and Reciprocity**

Furthermore, one trademark of egalitarian societies is that they promote prosocial behaviors such as sharing and reciprocity. Prosocial behaviors are behaviors that are defined as being generally beneficial to other people. Traditionally, these behaviors concern supplies or goods; in a virtual community this amounts to information. Sharing is best defined for this purpose as the willingness to relate something like advice, information, or an experience with others. While members in particular are open to sharing, their knowledge to questions posed by other members, members of the rats forum in particular are also willing to share personal experiences just for the sake of sharing their experiences. Though other members often respond in kind with advice or an

encouraging word, many are interested in relating their experiences with other like-minded individuals who understand what a pet rat, for instance, means to its owner. While none of the members who posted during the data collection period are veterinarians, many seek to provide answers to questions with information collected through their own personal experiences. For example, rats forum member R6 seeks information from the group by sharing a recent story of one of his/her rats:

I'm not sure I posted here in the group about my Kidori (who's 2 year birthday is the 14th) when she had to go in for surgery. She had a tumor that Dr. Marc was sure was partially necrotic and turned out that it the tumor was actually making her lactate. She pulled out her stitches multiple times and in the end it got infected. I had to flush out her incision for about a week on top of the antibiotics and keeping her separated from the big cage and the 'Terror Twins' who are her cagemates. She healed up just fine although, of course, her tumor came back with a vengeance and now she has 3 all together. Other than myco flare ups now and then Dori is otherwise healthy . . . except that her hair never grew back from her surgery. Rico not only had his neuter on the same day, but he also had to be shaved for a skin issue that had gotten infected and his hair is back to normal. So today when I had Animal General on the phone for another reason it occurred to me to ask why. Dr. Marc said that flushing the wound can damage the hair follicles and that it was nothing to be concerned about. Dori doesn't seem to mind it. Her age and weight make it hard for her to properly bath herself so the loss of the hair really isn't a big

deal for her. Has anyone else ever had this happen or any other goofy side effect?

By sharing the ailments that one of his/her pet rats has recently endured, R6 seeks confirmation and help from other members of the group who may have experienced similar situations in the past due to the fact that all 22 members who responded during the data collection period own multiple rats and have for many years. In response to the question posed by R6, five other members post responses. For instance, R3 posted a similar experience he/she had with a rat:

Miley had a shoulder tumor removed & her fur came back. Then the tumor came back in the same spot so it was removed again. Now it's bare there & the nylon stitches are still sticking out a bit. Bolt chewed off the ends of his stitches during the last week, guess he didn't want to go back to get them out. I'll have to check to see if his fur came back down there, he hates me looking!!

R5 posted words of encouragement:

He's a shy guy! It's probably still just sore. With love, [R5].

Like R3, R7 posted a similar experience he/she had with a pet rat in an effort to answer the question posed by R6:

I noticed that my rats' fur seemed to grow back slower or even not at all as they aged. Mira particularly who lived to be almost 3. She also had a lot of tumors and I just assumed that her body was just too busy with the tumors and from age to make hair growth a priority. I never heard that flushing it would damage the hair. I had a male rat that had so many surgeries, abscesses and infections that he was

flushed multiple times a day for several months and his hair came back perfectly. Interesting....

R2 also provides feedback in the form of personal experiences:

In older rats, I have commonly seen that the hair doesn't grow back well or at all, at a surgery site. Younger rats usually grow all of it back. I had a Himalayan boy who had a cutaneous Lymphoma tumor taken out on his back, where he was light cream colored, and it grew back dark brown like his points - nose, butt, ears and one big brown spot in the middle of his back ... So, not unusual.

Similarly, R2 also responds to the note R7 posted in response to the original question:

I remember Mira well, she was a wonderful old girl!

Yes, I have not linked flushes with no hair growth, more linked to old age in my cohort, but that is just observation.

Finally, R15 provides two personal examples where he/she agrees with R2's comments about the age of the rat affecting healing time and attempts to answer the original question as well:

Hi [R6], I have had MULTIPLE rats in surgery for a multitude of reasons and I agree with R2, it is age (maybe health status as well) A couple of my examples are:

1- Lucy when we got her she was a young (under 7 months) [rescue]. A vet had injected her between her shoulders with baytril injectable, not knowing that you can not do that with a rat as the injectable baytril will cause necrosis. When we received her it had already deteriorated the tissue down

almost to the muscle, over an area larger than a quarter.

Within 4 weeks with proper wound care she was completely healed and all fur returned as if it was never damaged.

2- Frick also happened to be a [rescue] and when he was over 2 he had a bb sized growth removed from his hind qtr. One of vet techs at AG got a little carried away when they shaved him for surgery and completely shaved him from the waist down. The incision healed quickly and perfectly, but none of the fur ever returned, for the rest of his life it looked like he had taken off his fur pants and was walking around naked. Lol

Throughout this exchange, it is clear that this tight-knit group is not only willing to share information, but also personal experiences and words of encouragement for a fellow member who is experiencing a tough time.

In response to requests for help, it was not uncommon for the original poster to acknowledge the replies to his or her request for advice by thanking posters for their ideas and advice. This type of reciprocity, perhaps best described as a prosocial behavior directed towards others within the group as a response, though simple, further points to the closeness of the group and the established sharing practices prevalent in the community. Furthermore, it is apparent that there is no expectation of payment of any sort or a desire to reciprocate information from R6. They are simply responding to his/her difficulties and trying to provide relevant information that would allow R6 to create a continued course of action for his/her rat if necessary and handle the situation as it develops. By connecting a large group of individuals who share

one's passions and interests, these unrelated individuals contribute to such discussions because they know that should the need arise, the likelihood of group members coming to their aid is improved if the overall tone of the group is unreservedly helpful towards those in need.

Additionally, it is clear that the original poster of the question, R6, is not the only beneficiary from the discussion. This high level of cooperation amongst members ultimately benefits the entire group; though the group boasts a membership of 133, only 22 members, or approximately 17% of the group, actively posted at least one time during the data collection period, meaning that 111, or 83% of members lurked in the background. It is unknown the number of individuals who are not members of the group but who lurked as well. However, regardless of the number of active posters, 100% of members have access to the information and are potentially now more knowledgeable on the topic at hand, even if one of the lurkers had a similar problem but was unwilling to post a question to the group as a whole or if a new member digs through the archives and stumbles upon this exchange. Nonetheless, everyone who viewed the posts benefited from the prosocial act of a few individuals posting for the good of the whole group.

This group, which is relatively small, is a densely-knit group that appears to experience high levels of trust and support amongst members. Due to members' length of time in the forum or dedication to the subject matter of the forums, exchanges such as the one detailed above often create strong attachments to other active group members. In this case, these strong

attachments encourage members to both participate in the group and offer information and advice, even to total strangers. The closeness of group members is evident in the exchange, such as when R2 indicates that he/she is familiar with one of R7's rats and compliments the rat with fondness. Comments such as these indicate that members are comfortable enough with the group and experience high enough levels of trust to regularly post personal information about themselves and their pets.

Additionally, the sharing and reciprocity in the Rats Forum can be seen transcending the confines of the virtual community. While most of the interaction between members certainly occurs in the virtual setting, some of the Rats Forum members also interact outside of the virtual world as well. For instance, during the holiday season, many of the members exchanged home addresses in an effort to implement a holiday card exchange. Furthermore, many of the active members are familiar with each other's birthdays and express birthday wishes in the forum. Though members of the forum could potentially live anywhere in the world, historical records of the forum indicate that several members live in close proximity to each other; this has led members to share information not only through the computer-mediated communication methods, but also discuss local information, such as preferred veterinarians in the local area, how best to get an appointment, and the best way to explain symptoms of the rat.

These examples all highlight the close connection that some members experience with others in the community and ways in which sharing and reciprocity can extend beyond the networks.

#### **4.1.3 Free Access to Resources**

While a member of a virtual community has every right to withhold information from the group at large, it is not in the group's interest to do so, nor does it benefit the member any more than having the knowledge already did before. As such, egalitarian communities often provide unfettered access to resources, or access to information about the topic of interest for the forum through discussion, sharing of news items, and so on. Though a traditional egalitarian society may be more concerned with foodstuffs or supplies, virtual communities' main concern is information that is give to all group members. For example, a common complaint amongst rat owners is that rats are often misunderstood as pets. Many people harbor the misconception that a pet rat is one that was scooped up from a sewer system and is therefore dirty, aggressive, and disease ridden when in fact most pet rats come from breeders, pet stores, or rescues. Pet rat owners are always ready to defend their pets to those who do not understand; R9 posted a news article for the group at large to read and pass on regarding the misconceptions that face pet rats and the surprisingly popularity they enjoy amongst pet owners:

Hi, there is a wonderful ratty article in today's NY Daily News: "Love, by a whisker!" It is also online:



[http://www.nydailynews.com/lifestyle/pets/2011/05/28/2011-05-28\\_love\\_...](http://www.nydailynews.com/lifestyle/pets/2011/05/28/2011-05-28_love_...) Enjoy!

R11 responds in kind to the article posting and commends the article and its intent:

Excellent, wonderful and positive article! It is so great to see such a nice piece on these little guys. J Thank you so much for sharing, [R9]!

R4 also posted a news article concerning rats being used as service animals:

A relative of mine found a very interesting article on rats being used as a service animal. The article appeared in yesterdays ( 5-18-2011 ) news article " News for You" Unfortunately when you to try to view the article online it is a paid subscription so it only lets you see the photo of the woman Dani Moore & her trained service rat Hi Yo Silver & a very brief paragraph. I have pasted the little bit they allow you to see below. The story in the article states that that Dani Moore owns 2 pet service rats, she has worked with rats for over 10 years. Dani Moore has Spinal nerve injury's, the rat alerts her to spasms she suffers & licks her necks which tells her to take her medicine. A rat is kept on her shoulder for 90 min at a time on a harness & leash attached to her clothes with a tag telling people not to touch the animal because the rat is working. She then puts the rat back in his cage & brings the second rat out for 90min on her shoulder alternating them back in forth. Certain states are now prohibiting service animals to only dogs & small horses so the article talks about how people like Dani need the laws to stay the same so she can use her trained rats as

service animals. Dani lives in California the article says & California has not changed their laws allowing her to use her rats as service animals.

Similarly, the aquarium forum often posts resources on a variety of topics. For instance, in its “Group Rules” post, a useful frequently asked question site all about aquariums is linked for all to access.

Moreover, due to the manner in which the forums were set up, everyone (members and non-members alike) have free and open access not only to current posts, but also all archival information as well. This is the ultimate in free access to resources for a community.

#### **4.1.4 Freedom to Join and Leave Group**

Finally, a key aspect of egalitarian societies is that members are free to choose their associations and may join and leave a group as they desire. Traditionally, this is done by “voting with one’s feet,” and simply walking away from a group and joining another one. Due to the anonymous nature of the internet and the thousands upon thousands forums to join, it is simple to switch sites and find a different forum that better suits one’s needs. Both the rats forum and the aquarium forum explicitly state that anyone is welcome to join. Similarly, members can choose to leave the group at any time.

#### ***4.2 Benefits to Participating in Virtual Communities***

To address the second research question, which asks what benefits members receive from participating in virtual communities, this section will focus on dissecting the motivations for participating in virtual communities and understanding what benefits members derive from such usage. Members of virtual communities do not receive tangible benefits for their participation, advice, opinions, or shared information, and therefore any benefits that are received must necessarily be intangible. However, if benefits are intangible, it is important to understand why people continue to contribute because analysis of collected data indicates that members participate and contribute to virtual communities. In analyzing the content of contributions from members in both forums, it is here where the major themes of identity expression, expertise, and the goal of the posts are relevant in that these themes represent benefits users receive from participating in and contributing to virtual communities.

#### **4.2.1 Identity Expression**

As users engage in the process of sharing personal information about themselves and their experiences, they willingly reveal portions of their identities and form a narrative of self for others to consume. Many times these aspects are revealed to lend support to one's statements or to provide context for someone else's comments. In doing so, a user therefore provides background information about him or herself (intentionally or unintentionally) that others may find useful while reading and interpreting a post. This background is necessary in light of the fact that the traditional social cues, such as facial

expressions or tones of voice, are absent in these virtual community message boards. As such, all other members can rely on is the identity that one projects through posts. Posts that were classified as “personal story” provided excellent examples of identity expression, since the goal was not necessarily to provide information or emotional support in response to someone else’s post, but rather to express a personal story that helps define who an individual is in the context of his or her rats. In doing so, group members gained insight into the individual who posted the story as he or she willingly expresses a part of who he or she is.

Interestingly, the members in the rats forum tend to express their identity through their pet rats and the work they do on behalf of rats. In the following narrative, R1 tells the story of how his/her rat persevered through what was thought to be a life-threatening disease:

I feel so compelled to write this inspiring story about my Becca. I've kept rats for a while now and have never seen such a remarkable recovery. I absolutely ADORE my rats as we all do. I am positive every single one of them know that without a doubt. All my friends and family know that as well. At night, when I go into their area and sit to play, all 22 girls come and try to get on my shoulders, pull my hair, poke my eyes and lashes, etc. They are so wonderful and appreciative. The longer I keep them, the more I am amazed at their spirit, and kindness. If there ever is an animal that is so misunderstood, it is truly the rat!!

... about 8 mos ago, Becca developed an inoperable mammary tumor that grew rapidly to a very large size. Due to its location, close to her vaginal/butt area), her age and

the size of the tumor, I had been contemplating putting her to sleep. Her quality of life was mediocre and this was a daily thought as I did not want her to suffer. I was on close watch...

... Over the last month, she has had a remarkable turn around. After her last bath, she started cleaning out her wound...I have witnessed her cleaning it so many times now, that it has actually disappeared. Yes, the tumor is now a flattened out disc shape of what it once was. Just this morning, I found she had separated it from her body and it sat on the shelf, outside her box. She is free from what once was a tennis ball size mammary tumor! I have never seen such a remarkable recovery from any animal in my 49 yrs on Earth. I couldn't tell you how happy and excited I was to see that "thing" just sitting there by itself...I am in total awe of her whole process. The vet is speechless as well. I can hardly wait for Monday to tell him she released this tumor!

To say the least, I am in total awe of this tiny little creature and the adversity she just overcame. We have all heard or read of an animal gnawing off a foot to release itself from a trap or a situation, but a tumor? I can say with all honesty I thought she was going to simply die soon from this infection. I am so glad she proved me wrong.<sup>1</sup>

Stories like this are very personal and reach out to community members who experience similar feelings for their pets. R1's story allows readers to see how

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<sup>1</sup> Though the story has been condensed for this section, Appendix A provides the whole narrative.

much he/she loves his/her pet rats, how much experience he/she has with them, the care and attention he/she devotes to them, as well as his/her devotion to their well-being. Because members of this forum care for their rats in similar ways, they understood the context of R1's stories and reciprocated with words of encouragement and by sharing their happiness, their worries, and wonder at the story of Becca the rat. R3, for instance, expressed the following:

That's such good news!! cuz Miley has a couple large tumors by her privates too but can still get around. I sure hope she'll know how to remove it!! Thanks for giving me hope & hugs to you & Becca.

By sharing part of him or herself, R1 was able to provide hope to R3. This type of identity sharing serves to further the trust the group feels with one another and allows them to focus their energies on providing information, advice, and social and emotional support. R4 expresses happiness and wonder for R1 with the following post:

What a amazing story & a amazing rat. The perfect gift to you for Mothers Day from your little girl. Enjoy each & every moment with her. Thanks for sharing it with all of us.

Similarly, R5 posts the following reply:

I've never heard of such a thing! She literally did self-surgery and simply walked away from it. Unbelievable.  
What a remarkable story. Thank you for sharing.  
With love, [R5]

Throughout this conversation, those involved in it must not only take themselves and their experiences into account, but also those of the other members as well. By expressing these parts of one's identity to this community,

members continue to shape their identities to fit within the context of the group as a whole just as the group is continually shaped by the identities of the individuals involved.

#### **4.2.2 Expertise**

In addition to creating an identity that fits within the overall virtual community, a key benefit of belonging to virtual communities such as these forums is that one stands to benefit from others' expertise. Such forums also allow an individual to share his or her expertise on a given subject and influence how group members view him or her. In being recognized for his or her expertise, a person continues to earn prestige, thus adding to the importance of his or her contributions.

In reacting to R1's story above, R2 showcases his/her expertise in dealing with similar situations:

Stories like this one are why I always counsel folks who can support a critical rat, to continue to do so, if the rat is willing and still eating, not in uncontrollable pain, not open mouth breathing, the three biggie clinical signs to monitor when making a life or death decision). Sometimes they surprise you in a big way! I always say "err on the side of life if at all possible, because you can always PTS [put to sleep], but can't bring them back from death".

One of my own miracle rats, Thelma, is a similar story... She was almost dead. I have oxygen here, so I gave her about 15 minutes of gentle CPR with an oxygen mask on her face. She

pinked up, and started breathing on her own, but did not regain consciousness. Not letting that stop me, I placed her in an isolation cage on towels, with a hot water bottle, and made an oxygen tent for her, and kept the air oxygen enriched (low levels mixed with room air). She lay unconscious for 4 days, and I supported her with warmth, steroid injections to prevent swelling in the brain, and SQ fluids to prevent dehydration.

Although R2 is not a veterinarian, he/she showcases his/her comfort with veterinary practices to ensure the well-being of his/her rats. Similarly, R2 responds to another's post about hematomas by dispensing the following advice:

With all of my hematomas and I have seen them in a good number of tumor removal cases, just because mammary tumors usually have a lot of vessels that feed the tumor) the vets at Animal General ( and everywhere else) recommend just waiting until it reabsorbs. The pressure of the hematoma will shut off the leak. All of mine have gone away in good time. Don't get anxious, this is not a serious problem. Dr. Marc was right in taking a wait and see approach.

While R2 is often looked upon for veterinary advice for rats, R3 is often contacted regarding the rescue of rats or their placement in foster or permanent homes. After being called to catch a rat that was let loose in the building from where his original owner was evicted, R3 explains his/her process in handling such cases after being asked how he/she advertises that a rescue rat is available:



hahaha, advertise?? People seem to find me to give rats to or they call for help. From there I contact all my closest rat people & shelters. Always good to keep a list of shelters who take rats & people that have had them. I got a friend to foster those others that I got called on last month. I usually have to give the food, loan a cage , make a hammock or some other service in return ;-). Now the hard part is telling people I'm NOT taking them any more :-( but will still help any way I can cuz there's no one else around here.

Though R2 and R3 are only two of the 22 individuals who posted to the rats forum during the data collection period, their posts (59 and 51, respectively) account for approximately 33% of all posts made during the months of April-June 2011. This forum provides these members with the ability to help others by distributing their knowledge and expertise amongst like-minded individuals who share similar interests. While this is a direct benefit from others, R2 and R3 benefit from the capability to develop their expertise and increase others' trust in their knowledge and abilities.

Members of the aquarium message board similarly enjoy the benefit of members' expertise with aquarium equipment, fish, and ponds. For instance, A5 poses a question to the group as a whole concerning a power filter that suddenly began to make a loud grinding and buzzing sound. A6 responds:

Hi there. There are a few different things that cause filter noise. If the intake isn't seated well, air bubbles will get in and cavitate in the impeller chamber which can be fairly

noisy. Make sure the intake is seated and the filter isn't sucking air. If that doesn't work, there may be gunk in the impeller chamber or wrapped around the impeller shaft. Take the filter apart, completely remove the impeller and clean it well. Also use a small brush to clean the impeller chamber - I use a little test tube brush. Make sure there isn't anything in the chamber like a snail or a small bit of gravel. Check the impeller shaft for damage and wear and make sure everything is moving easily and smoothly. If the filter still makes noise when you put it back together, or the impeller shaft is worn, you probably need to replace the impeller assembly. They do wear out over time and a quick Google search shows replacement impellers at lots of retailers.

No, it is not OK to turn the filter off every night. The lack of oxygen flowing through the filter will kill the bacterial bed and the filter will spit out a nasty cloud of dead bacteria in the morning that isn't healthy for the fish.

This exchange highlights not only A6's knowledge of filtration systems for tanks, but also his/her knowledge of tank health and its effect on the fish within it. Similarly, when A9 posed a question to the group regarding wounds that suddenly appeared on his/her large koi, though A6 admittedly is not a "koi person," he or she was willing to do the research to help his/her group member:

I'm not a koi person, so I turned to Google. It sounds like a lot of things can cause sores in pond fish. There is a chance it's an infection and if so you would need to use antibiotics.



and contributes to a collectively owned knowledge base that can be used to help current and future members of the group.

#### **4.2.3 Goals of Posts**

Finally, the goals of the messages that members post provide a benefit to members in three ways. Because these communities serve to meet certain social functions for members, understanding those needs is key to understanding that benefits members receive for participating in and contributing to virtual communities. Although nine different classifications of posts were uncovered during the study, a content analysis of collected data revealed three prominent classifications of messages that members posted. The prominent classifications include information/advice, emotional support, and activism. Though other benefits derived from participation in virtual communities exist, like identity expression or an increase in expertise and prestige, those appear to be more indirect, though no less important, benefits from participating. The direct benefit people receive from participating first comes from reading the posts and understanding the goal of the post (to offer information, to offer emotional support, to share a story, and so on) and the content contained within.

As previously stated, each post was read and analyzed from both virtual communities. The following charts depict the breakdown of posts by type and member for both forums for April 2011, May 2011, and June 2011.

	<i>Information</i>	<i>Personal Story</i>	<i>Advice</i>	<i>Seeking Advice/ Posing Questions</i>	<i>Activism</i>	<i>Emotional Support</i>	<i>Forum Actions</i>	<i>Jokes</i>	<i>Other</i>	<i>Total</i>
R1	1	0	0	0	2	0	0	0	0	3
R2	4	3	1	0	3	4	0	0	6	21
R3	1	0	0	0	0	3	2	3	3	12
R4	5	0	3	0	3	1	4	0	2	18
R5	0	0	0	0	0	1	0	2	0	3
R6	4	0	0	0	1	0	1	0	0	6
R7	0	0	0	0	0	0	0	1	1	2
R8	0	0	0	0	0	1	0	0	4	5
R9	2	0	1	0	1	3	0	0	0	7
R10	0	0	0	0	0	2	0	0	2	4
R11	1	1	0	0	0	0	0	0	1	3
R12	0	0	0	0	0	0	0	0	0	0
R13	0	0	0	0	0	0	0	0	1	1
R14	1	0	0	0	0	0	0	0	2	3
R15	0	1	0	0	0	1	0	3	1	6
R16	0	0	0	0	0	1	0	0	0	1
R17	0	0	0	0	0	1	0	0	1	2
R18	1	0	0	0	0	1	0	0	1	3
R19	3	0	0	1	0	0	0	0	5	9
R20	1	0	0	0	1	0	0	0	0	2
R21	0	0	0	1	0	0	0	0	0	1
R22	0	0	0	0	0	0	0	0	1	1
Totals	24	5	5	2	11	19	7	9	31	113

Figure 4: April 2011 Rats Forum Post Breakdown

	<i>Information</i>	<i>Personal Story</i>	<i>Advice</i>	<i>Seeking Advice/ Posing Questions</i>	<i>Activism</i>	<i>Emotional Support</i>	<i>Forum Actions</i>	<i>Jokes</i>	<i>Other</i>	<i>Total</i>
R1	0	1	0	1	0	1	0	0	0	3
R2	3	0	5	0	3	2	3	0	2	18
R3	5	4	1	0	3	4	0	0	4	21
R4	1	0	0	0	1	4	2	0	5	13
R5	2	0	0	0	1	4	1	0	0	8
R6	1	2	0	0	0	0	1	0	0	4
R7	0	0	1	0	0	0	0	0	0	1
R8	0	0	0	0	0	3	0	0	1	4
R9	1	0	1	0	2	0	0	0	1	5
R10	0	1	1	0	0	2	0	0	0	4
R11	1	0	0	0	0	1	0	0	0	2
R12	0	0	0	0	0	0	1	0	0	1
R13	0	0	0	0	0	0	1	0	0	1
R14	0	0	0	0	1	0	0	0	0	1
R15	0	0	1	0	0	0	0	0	3	4
R16	0	0	0	0	0	0	0	0	0	0
R17	0	0	0	0	0	0	0	0	0	0
R18	0	0	0	0	0	0	0	0	0	0
R19	0	0	0	0	0	0	0	0	0	0
R20	0	0	0	0	0	0	0	0	0	0
R21	0	0	0	0	0	0	0	0	0	0
R22	0	0	0	0	0	0	0	0	0	0
Totals	14	8	10	1	11	21	9	0	16	90

Figure 5: May 2011 Rats Forum Post Breakdown

	<i>Information</i>	<i>Personal Story</i>	<i>Advice</i>	<i>Seeking Advice/ Posing Questions</i>	<i>Activism</i>	<i>Emotional Support</i>	<i>Forum Actions</i>	<i>Jokes</i>	<i>Other</i>	<i>Total</i>
R1	0	0	0	0	0	0	0	0	0	0
R2	5	0	4	0	2	5	0	0	4	20
R3	1	1	0	0	1	5	0	0	10	18
R4	9	3	5	0	0	4	0	3	7	31
R5	0	0	0	0	0	1	0	0	1	2
R6	2	1	0	2	1	1	0	0	1	8
R7	0	0	1	0	0	0	0	0	1	2
R8	0	2	1	2	0	1	0	0	4	10
R9	0	0	0	0	1	1	0	0	0	2
R10	4	1	0	0	0	2	0	1	4	12
R11	1	2	0	1	0	3	0	0	2	9
R12	0	0	0	0	0	0	0	0	0	0
R13	0	0	2	0	0	0	0	0	0	2
R14	0	0	0	0	0	0	0	0	0	0
R15	1	2	1	3	0	1	0	1	2	11
R16	0	0	0	0	0	0	0	0	0	0
R17	0	0	0	0	0	0	0	0	0	0
R18	0	0	0	0	0	0	0	0	0	0
R19	0	0	0	0	0	0	0	0	0	0
R20	0	0	0	0	0	0	0	0	0	0
R21	0	0	0	0	0	0	0	0	0	0
R22	0	0	0	0	0	0	0	0	0	0
R23	0	0	0	0	0	4	0	0	0	4
R24	0	1	0	0	0	0	0	1	0	2
R25	0	0	0	0	0	0	0	0	1	1
Totals	23	13	14	8	5	28	0	6	37	134

Figure 6: June 2011 Rats Forum Post Breakdown

	<i>Information</i>	<i>Personal Story</i>	<i>Advice</i>	<i>Seeking Advice/ Posing Questions</i>	<i>Activism</i>	<i>Emotional Support</i>	<i>Forum Actions</i>	<i>Jokes</i>	<i>Other</i>	<i>Total</i>
A1	6	0	0	0	0	0	0	0	0	6
A2	0	1	0	0	0	0	0	0	0	1
A3	4	1	3	2	0	0	0	1	0	11
A4	0	0	0	0	0	0	0	0	0	0
A5	1	1	8	0	0	0	1	0	0	11
A6	0	0	0	0	0	0	0	0	0	0
A7	0	0	12	0	0	0	2	0	0	14
A8	0	0	0	0	0	0	0	0	0	0
A9	0	0	0	0	0	0	0	0	0	0
A10	0	0	0	0	0	0	0	0	0	0
A11	0	0	0	0	0	0	0	0	0	0
A12	0	0	0	2	0	0	0	0	0	2
A13	1	0	5	0	0	0	0	1	0	7
A14	1	0	0	1	0	0	0	0	0	2
A15	0	0	3	0	0	0	0	0	0	3
A16	1	0	0	1	0	0	0	0	0	2
A17	0	0	2	0	0	0	0	0	0	2
A18	1	0	0	3	0	0	0	0	0	4
A19	1	0	0	1	0	0	0	0	0	2
A20	0	0	1	0	0	0	0	0	0	1
A21	0	0	0	0	0	0	2	0	0	2
Totals	16	3	34	10	0	0	5	2	0	70

**Figure 7: April 2011 Aquarium Forum Breakdown**



	<i>Information</i>	<i>Personal Story</i>	<i>Advice</i>	<i>Seeking Advice/ Posing Questions</i>	<i>Activism</i>	<i>Emotional Support</i>	<i>Forum Actions</i>	<i>Jokes</i>	<i>Other</i>	<i>Total</i>
A1	2	0	2	1	0	0	0	0	0	5
A2	0	0	2	0	0	0	0	0	0	2
A3	1	0	1	0	0	0	0	0	0	2
A4	1	0	0	1	0	0	0	0	0	2
A5	0	0	1	0	0	0	1	0	0	2
A6	0	0	1	1	0	0	0	0	1	3
A7	0	0	2	0	0	0	1	0	1	4
A8	0	0	1	0	0	0	0	0	0	1
A9	0	0	0	0	0	0	0	0	1	1
A10	0	0	0	1	0	0	0	0	0	1
A11	0	0	1	0	0	0	0	0	0	1
A12	0	0	0	0	0	0	0	0	0	0
A13	0	0	0	0	0	0	0	0	0	0
A14	0	0	0	0	0	0	0	0	0	0
A15	0	0	0	0	0	0	0	0	0	0
A16	0	0	0	0	0	0	0	0	0	0
A17	0	0	0	0	0	0	0	0	0	0
A18	0	0	0	0	0	0	0	0	0	0
A19	0	0	0	0	0	0	0	0	0	0
A20	0	0	0	0	0	0	0	0	0	0
A21	0	0	0	0	0	0	0	0	0	0
Totals	4	0	11	4	0	0	2	0	3	24

Figure 8: May 2011 Aquarium Forum Post Breakdown

	<i>Information</i>	<i>Personal Story</i>	<i>Advice</i>	<i>Seeking Advice/ Posing Questions</i>	<i>Activism</i>	<i>Emotional Support</i>	<i>Forum Actions</i>	<i>Jokes</i>	<i>Other</i>	<i>Total</i>
A1	0	0	0	0	0	0	0	0	0	0
A2	0	0	0	0	0	0	0	0	0	0
A3	0	0	0	0	0	0	0	0	0	0
A4	0	0	7	0	0	0	0	0	0	7
A5	0	0	0	0	0	0	0	0	0	0
A6	0	0	1	0	0	0	0	0	0	1
A7	0	0	0	0	0	0	0	0	0	0
A8	0	0	0	0	0	0	0	0	0	0
A9	0	0	0	0	0	0	0	0	0	0
A10	0	0	0	0	0	0	0	0	0	0
A11	0	0	0	0	0	0	0	0	0	0
A12	1	1	0	1	0	0	0	0	0	3
A13	2	0	5	0	0	0	0	0	0	7
A14	0	0	0	0	0	0	0	0	0	0
A15	0	0	0	0	0	0	0	0	0	0
A16	0	0	0	0	0	0	0	0	0	0
A17	0	0	0	0	0	0	0	0	0	0
A18	0	0	0	0	0	0	0	0	0	0
A19	0	0	0	0	0	0	0	0	0	0
A20	0	0	0	0	0	0	0	0	0	0
A21	0	0	0	0	0	0	0	0	0	0
A22	0	0	0	1	0	0	0	0	0	1
A23	1	0	0	2	0	0	0	0	0	3
A24	0	0	0	2	0	0	1	0	1	4
Totals	4	1	13	6	0	0	1	0	1	26

**Figure 9: June 2011 Aquarium Forum Post Breakdown**

As Figures 4-9 indicate, the focus of the Rats Forum and the Aquarium Forum vary; while the Rats Forum is very focused on providing information or advice (approximately 27% of all posts), emotional support (approximately 20% of all posts), and activism (approximately 8% of all posts), the Aquarium Forum is predominantly focused on providing information and advice (approximately 68% of all posts). However, despite these varied approaches of the groups, both exhibit the characteristics of egalitarian societies in that showcase weak

hierarchical structure and foster equality of status, promote sharing and prosocial behaviors towards other members, provide free access to resources (for members and non-members alike), and members are free to join or leave the group as they see fit. The following discussion further illustrates the egalitarian nature of the Rats Forum and Aquarium Forum.

Because the content of a virtual community is member-driven, knowledge, information, and respectable advice provide members with a valuable currency or social resource for members. Virtual communities tend to focus on very specific topics with relationships among members mostly meant as a conduit for information exchange on specific topics (Ridings & Gefen, 2004). As is clearly seen in the “expertise” section above, seeking advice is a common occurrence in virtual communities due to the fact that these communities serve as meeting points for like-minded individuals. Though one could conduct his or her own research on a given topic, it is useful to take advantage of a network of experts or individuals who may have experienced similar problems.

Although the primary resource that is shared in virtual communities is information and/or advice, tight-knit groups, such as the rats forum, also provide emotional support for its members. Because individuals feel close to one another within a group like this, one may share an experience while seeking out nothing more than comfort from an individual who may understand. For instance, R3 posted the following message to the rats message board:

The last of my 4 baby boys is gone. After his surgery he was doing good then, no eating, not using his hands, started have seizures & listed to one side. His teeth were getting long but

he loved being held & tried real hard to eat his yogurt whip & applesauce. Didn't like the oatmeal mush. I will really miss this little nut- at least I have the sweat pants & my sweat shirt that he rat chewed & now I'm finding some fabric chewed that he had gotten into. Miley is close behind, another week or so. Then all I'll have is Screwee (Louie's new name) He needs work ;-)

(pic is Bolt with his messy applesauce face a couple days ago)

Given that many members of the group have lost a pet rat at one time, several offer their condolences to R3:

R4: I am so sorry [R3]. I still have Bolt's button & he was so very special. It really sadden me to hear Bolt has went to the bridge. Take Care

R10: So sorry...hug

R5: There's something to be said for an old rat with a messy face. God Bless you for loving your rats, [R3]. I'm so sorry to hear about him passing. They go too fast. I'm thinking of you. With love, [R5]

R4: How sweet, I just got to see Bolt with his little Apple sauce face. Ever since I saw the first baby picture of this little guy (& his brothers) I fell in love with his adorable little face, how could you not?

R11: I'm late on this but I just want to say that I am so sorry for the loss of Bolt and Kidori. They seem like such special little rats (love the visualization of little Kidori "stealing a finger to give kisses" and Bolt's sweet applesauce face picture) and I know they have left a big hold in the lives of those that knew them. They were lucky to have [R3] and [R6] to take care of them, respectively. I love this group because I love seeing the responsible, loving, and compassionate care of these so underappreciated little guys, and seeing the wonderful lives they lead and the people who are special enough to make a difference for them <3

Upon seeing the post by R3, each of those members who responded were able to offer emotional support in that difficult time, especially since they understand what it is like to lose a pet. While others in R3's physical environment may not understand the impact that losing a pet rat could have on an individual, R3 was able to seek the company of like-minded individuals who share a similar passion to get the comfort he/she needed.

Finally, a goal of groups like the rats forum is to provide information to the group about how to get involved to support a cause. Because these groups are composed of like-minded individuals with shared passions, it is natural that activism posts appear in a virtual community, particularly when there is an urgent need for action. In the rats forum, R3 posed a question to R5 asking if he/she had heard of an emerging situation:

[R5], Did you know about this?? This is about a senior center who is snap trapping rats cuz they don't know any

other way to discourage rats around there. The field across from this place is wide open. I told them to remove food & water sources but guess they don't get it. Any suggestion from any one will help.

R5 responds to the post:

I did not know about this and I can't believe this is happening in Boulder of all places. I'll give them a call tomorrow to see what I can do. Better yet, I'll try to stop by there. I'm not very strong with my convictions right now, I hope I can do something good. Any suggestions are welcome... \*With love,\* \*[R5]\*

Others also respond to the call for help; R9, for instance, poses questions to be considered when evaluating the situation as well as advice for improving it:

What's attracting the rats? Where are they getting food? If garbage is accessible, they will keep coming, just as [R3] suggests. Killing is not even the most efficient way to reduce numbers. They reproduce to match food availability. Reducing food (or water) sources will result in less attraction and the stress will reduce breeding rate. Now all you have to do is convince the people, which is the hardest part.

R2 offers advice as well:

Ask if they will consider a humane capture trap and then release into a safer area for wild rats. Make sure they are not trapping released pets.

I agree. Killing only leaves more room for others to come in where they are receiving food and shelter. If you eliminate the food and shelter, they will leave on their own.

As a result of the call for help in the forum, several members either called or wrote the senior center with helpful tips and advice about preventing the problem for the future.

From these findings, it is clear how virtual communities function as egalitarian societies and what benefits members receive from participating in and contributing to virtual communities. Virtual communities take the traditional notions of community and incorporate a new unseen layer to the fold; because virtual community members are shielded from the traditional markers used to judge people in everyday life, community members are free to exchange information, pose questions to the group, seek advice and emotional support, and encourage actions in support of a cause. These intangible benefits provide the impetus individuals need to continue to contribute to a community that provides no discernible tangible benefits (as one may expect in a traditional society). A sense of self and a sense of community encourage individuals to continually share their narrative with the group so that the group may benefit from his or her experiences and expertise. Through this online transfer of information about shared passions, rats and aquariums in this case, the users who have chosen to be networked together develop a sense of belonging to something larger than themselves and work collectively to gather knowledge and information on the shared passion.

## Chapter 5 – Conclusion

Technology is changing rapidly and is shifting how the world interacts, behaves, and communicates. Despite a significant change in how information is spread and used within this technological age, many social scientists, especially anthropologists, fail to understand the importance of incorporating this new environment into studies of human behavior. Though one will not examine behaviors in most virtual communities as one would a laboratory, the behaviors and the meanings behind those behaviors are available for research and analysis.

Despite the success of this research project in answering the research questions that were posed, it also raised several issues that will require future research. First, due to privacy concerns for individuals within the message boards, this research project precluded actually interacting with community members. As a result, this project cannot answer the question of *why* members contribute to virtual communities, only what members receive from doing so. Perhaps a protocol for confirming informed consent could mitigate privacy concerns in the future, allowing participants to be interviewed or allowing researchers to post surveys to message boards or chat rooms. Though participation cannot be guaranteed with this method, it could provide researchers with direct access to the target audience. Additionally, the anonymity provided by virtual communities could cast doubt over gathered data since there is no way to verify who posted the information, the intent of the post,



and the information behind it without directly interacting with the individual in question. This lack of data on the individuals who were posting is a limitation that could be addressed by gathering biographical information on participants and tracking their contributions in the virtual community for longer than a three-month period.

This study of virtual community behaviors in message boards has demonstrated that individuals flock to these virtual communities for several reasons; first, the egalitarian nature of virtual communities encourage all individuals to share information, pose questions on various topics, and to get involved. Those who may not normally speak up or get involved in a face-to-face situation are emboldened by the relatively anonymity the virtual world provides and allows them to interact with a wide variety of people who share similar interests and are seeking similar information and advice. In doing so, individuals also provide information about themselves to trusted group members, which allows them to continue to build their identity and contribute to the group's identity.

Next, users receive intangible benefits from contributing to and participating in virtual communities. Not only is there an open flow of information, other members are quick to offer advice, their expertise, and emotional and social support when needed. Benefits like these contribute to group solidarity and encourage trusted individuals to continue to develop a rich and meaningful narrative in the community.

Ultimately, this study serves to extend the traditional notions of anthropology and social structure to the present by including more than what one traditionally labels as a community. Self-emerging virtual communities have long been left out of current social science analysis, perhaps due to the unfamiliarity of these communities, a lack of classification guides for the wide variety of communities available online, or with social scientists' discomfort with labeling these groups as communities at all. Despite this, this study has shown not only that virtual communities function as traditional communities do by providing support and sharing information, but also that they function as egalitarian in nature. By utilizing traditional anthropological social structure theory and applying it to self-emerging virtual communities, it is clear that these communities function as a social system within a defined social organization with rules and goals that members choose to follow.

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## **Appendix A: “One Truly Amazing Rat”**

A post by R1

“I feel so compelled to write this inspiring story about my Becca. I've kept rats for a while now and have never seen such a remarkable recovery. I absolutely ADORE my rats as we all do. I am positive every single one of them know that without a doubt. All my friends and family know that as well. At night, when I go into their area and sit to play, all 22 girls come and try to get on my shoulders, pull my hair, poke my eyes and lashes, etc. They are so wonderful and appreciative. The longer I keep them, the more I am amazed at their spirit, and kindness. If there ever is an animal that is so misunderstood, it is truly the rat!!

Becca came to me about 2 years ago, afraid and untrusting of everyone and anything. She is one of those rats who is in a constant state of fear and panic just b/c. She is a beautiful Black Berkshire with a very pointed face and bright eyes. About 8 mos ago, Becca developed an inoperable mammary tumor that grew rapidly to a very large size. Due to its location, close to her vaginal/butt area), her age and the size of the tumor, I had been contemplating putting her to sleep. Her quality of life was mediocre and this was a daily thought as I did not want her to suffer. I was on close watch. Becca was able to get around somewhat and did not seem too bothered by the massive size. Needless to say, I fed her extra food and would sneak her a taste of anything to keep her weight up, even though I was losing the battle. About 3 mos ago, this tumor became infected from a sliver of Aspen bedding that lodged itself through the bottom of this massive

tumor. Even though I was washing out her wound daily, it became VERY infected and she was placed on antibiotics. B/c she was laying in a pouch hammock, (as she could not climb into the hanging hammocks), she was lying in her own urine/feces. Changing her bedding became a twice daily chore. I was having difficulties keeping up with the infection no matter what I did. The infection had become large, awful and smelly. Her immune system was on overload to keep fighting it and I was afraid the infection might spread to her heart (or other vital organs), but "she kept fighting" so I had done everything I could to help her. I had started to tell myself she was going to die soon and I was preparing myself to put her to sleep. The vet agreed, even though he and I kept giving her antibiotics, pain meds and a bath every day, "for just a little longer." The poor thing even ended up w/ mites that resulted in an olive oil treatment. I was feeling really bad for Becca. My heart was breaking. She was always alert and bright eyed, any time I called her name or approached her home. This is what stopped me from putting her to sleep. She was still in there!! She never missed a meal,(even though some days she looked like hell) and always dragged herself around to be with me when I approached.

Over the last month, she has had a remarkable turn around. After her last bath, she started cleaning out her wound. I don't ever once remember "seeing" her clean out this wound for some reason. I thought she had to be doing it even though I haven't seen it. Becca has always just let me do it. I just assumed it was too painful (or for whatever reason) for her to do it. I have witnessed her cleaning it so many times now, that it has actually disappeared. Yes, the tumor is



now a flattened out disc shape of what it once was. Just this morning, I found she had separated it from her body and it sat on the shelf, outside her box. She is free from what once was a tennis ball size mammary tumor! I have never seen such a remarkable recovery from any animal in my 49 yrs on Earth. I couldn't tell you how happy and excited I was to see that "thing" just sitting there by itself. No it was not a mess. There were no messes. I have watched her "sever" this tumor from her body, somehow, w/o much blood loss. It has been a remarkable observation witnessing this. I am in total awe of her whole process. The vet is speechless as well. I can hardly wait for Monday to tell him she released this tumor!

To say the least, I am in total awe of this tiny little creature and the adversity she just overcame. We have all heard or read of an animal gnawing off a foot to release itself from a trap or a situation, but a tumor? I can say with all honesty I thought she was going to simply die soon from this infection. I am so glad she proved me wrong.

Happy Mother's Day!!"

## **Appendix B: The IRB Process**

Due to the unique research setting and the reviewer's apparent lack of familiarity with virtual communities, the Institutional Review Board (IRB) process took two months from original submission for final approval to be granted. During this time, several revisions to the proposed research process were required by the IRB in order to obtain approval for this research project to proceed. The original intent of the research project was to join two virtual communities and potentially interact with community members at a low level to fully understand interaction patterns and fully develop relationships within the communities selected for study. Because the selected communities did not prohibit researchers from joining or participating but did require membership to participate (posting, in these cases), the goal was to join the communities to post certain questions to their members as a member in an effort to minimize undue influence or make members feel uncomfortable answering in the public forum. In particular, the questions were going to focus on asking what benefits participants received from participating in the selected groups. Once the questions were asked, the research design indicated that the behavior of the group would be primarily observed to understand communication patterns and discern evidence of egalitarianism.

The original IRB protocol was submitted on 31 January 2011. Revisions were requested on 17 February 2011. Privacy issues were the primary concern for the reviewer. First, the review indicated that in general the IRB does not

approve studies involving deception. Since there was no plan to obtain informed consent from all members of the publically available group, the IRB felt as though the proposed protocol relied on deceptive techniques to obtain information. More specifically, the reviewer asked for a stronger explanation as to why the proposed groups for study were selected and a scientific justification for using chat rooms and deception in the study. As a result of these issues, the research protocol was changed, foregoing joining the groups and asking relevant questions, the new protocol would include observational behavior only. Furthermore, it was necessary to emphasize the public availability of the selected virtual communities and highlight that membership is not required to access information. Thus, observing communication patterns is not deceptive if the forum is open to everyone.

Additionally, it was necessary to highlight that the Collaborative Institutional Training Initiative (CITI) training, which is required before a researcher can conduct his or her research, indicates that the proposed research was eligible for exemption because it was an observation of public behavior (in the form of unrestricted, open access, publicly available message boards that do not require membership to access data) that will not place the subjects at risk of criminal liability or be damaging to the subjects' financial standing, employability, or reputation due to the privacy and confidentiality factors in place. In posing no more than minimal risk to individuals, it was clear that any harm or discomfort potentially induced by this research were no greater than

what one would normally encounter in everyday life or during the performance of routine physical or psychological exams or tests.

To address the reviewer's concerns, the changes to the research protocol described above were submitted on 17 February 2011. However, once again, due to the apparent lack of familiarity with the research environment to be used in this research, the next round of concerns were not provided until 25 March 2011. During this time, the reviewer indicated that based on the current review, minor clarifications and revisions would be necessary before it could be given final approval as an Expedited IRB. First, the reviewer asked that it be clarified if the researcher would be participating in the communities at all (it was recommended by the reviewer that no participation is best). Next, the reviewer asked for clarification if the groups that would be observed would know if the researcher was logged on (they would not) and if the data could be downloaded anonymously (it could). Finally, the reviewer asked that the protocol indicate that any direct quotes indentifying others will not be used in a manner to identify any participants throughout the life of the research (it would not since no names were used – only codes).

After providing the updates to the protocol once more, final approval for the expedited project was granted on 31 March 2011. While the review and approval of these projects typically take anywhere from two- to four-weeks, it is suspected that the process for this specific project took twice as long due to the reviewer's unfamiliarity with the proposed research environment. While it is not known how many research proposals concern Internet research were submitted

to this IRB for review at this institution, it was clear by the number of clarifications required on the nature of the virtual communities that were to be studied, the discomfort with the idea of interacting with participants in an open forum, and the length of time it took to approve the project that the IRB may have been uncomfortable with the entire research protocol. However, because it met the requirements for an expedited protocol and the protocol was changed sufficiently enough to ensure that no interaction would occur with message board participants and that the privacy of participants would be preserved, the IRB approved the project.

Though grateful that the project was approved by the IRB, it is unfortunate that the project had to be changed in order to receive this approval. Although the research goals were accomplished with the updated protocol through observation alone, this research could have gone one step further and answer why people choose to join and participate in virtual communities if they could have been asked and given the chance to answer the question. Although protecting privacy is and should be a key concern, it appears that the main problem encountered with this project is the issue of informed consent. Since informed consent is obviously required by traditional research projects where participants are actually experimented on, the IRB judged this protocol against the standard experimental protocol. However, the operating environments are different enough that perhaps a separate standard needs to be created. For instance, should the fact that individuals knowingly post and participate in a publically available forum count as informed consent? Furthermore, does posing

questions to the group as a member of the group constitute experimenting upon people?

Unfortunately, at this time, a separate protocol for virtual research does not seem to exist. It is recommend that future researchers of this environment first understand his/her IRB's rules of virtual research (if any exist) and communicate with the review board closely to avoid misunderstandings, delays, and changes in research protocols.